

The Hippocratic Treatise *On Glands*

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The Hippocratic Treatise *On Glands*

Edited and Translated with Introduction and Commentary

by

Elizabeth M. Craik



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PREFACE AND ACKNOWLEDGEMENTS

‘The modern scientist stands amazed before the innovative concepts expounded in this ancient medical document. Indeed, the functional anatomy of the lymphatic system and lymph nodes emerges with impressive precision ... the author provides an absolutely modern interpretation of their physiopathological significance’; so Crivellato, Travan and Ribatti, *Leukemia* 21 (2007), 591–592. In certain aspects, the content of the treatise is unique, not only in the Hippocratic Corpus but in all of ancient medicine. But I here argue, on the basis of cumulative evidence in both content and expression, that the author of *On Glands* is identical with the author of *Generation-Nature of the Child* and *Diseases* 4, as well as the author of a large body of material in the gynaecological texts transmitted in the Hippocratic Corpus, including the short pieces *Diseases of Girls* and *Infertile Women*. An important implication is that there was considerable awareness of glandular anatomy, physiology and pathology among Hippocratic doctors, especially among those with an interest in embryology. On the basis of this unexpected and unexpectedly early grouping, *On Glands* may plausibly be dated to the early decades of the fourth century. The author responsible for this substantial fraction of the ‘Hippocratic’ writings is an important and original thinker, who occupies a pivotal place between the thought of the Presocratics and the researches of the Academy and the Lyceum.

In the course of work on this book I have been fortunate to have an attachment to the University of St. Andrews (as honorary professor in the School of Classics) and to the University of Newcastle upon Tyne (as visiting professor in Greek, School of Historical Studies, and as member of the Northern Centre for History of Medicine). I am grateful to both institutions for their support. I have benefited also from frequent visits to the Wellcome Trust Centre for the History of Medicine at University College London, and to the library there. I owe a particular obligation to Professor Vivian Nutton of University College London, who some fifteen years ago, when I was beginning work on *Places in Man* and *On Anatomy*, recommended a study of *On Glands* also. Then, when I did finally return to this fascinating and challenging treatise, he helpfully

answered various queries and commented most constructively on a final draft. It is a pleasure to record my thanks to colleagues in Newcastle: Professor Philip van der Eijk read a complete draft and made many valuable suggestions; Dr Thomas Rütten responded in patient and helpful detail to various questions, both medical and philological; Dr Pilar Pérez Cañizares assisted with much general information on the manuscripts and in particular facilitated access to the manuscript Mo in digitized format. In matters relating to the text, I am much indebted also to Professor Jacques Jouanna of the Sorbonne, Paris for generous aid in checking and communicating readings of the manuscript V.

For all anatomical questions, I am—as ever—most grateful to Dr Susan Whiten, who has read the translation and relevant parts of the introduction and commentary in successive drafts, and has been a constant source of information and insight. I am especially indebted to her for executing the anatomical diagrams, an invaluable adjunct to this work. I am grateful also to Dr Stephen Chapman for a clear and illuminating account of the modern incidence, symptoms and treatment of tuberculosis. A version of parts of the Introduction (drawn from II and III A) was presented in August, 2008 at Colloquium Hippocraticum XIII, held in Austin, Texas; I thank attendees for their comments.

I wish also to thank staff at Brill for their meticulous work in the production of this book.

Finally, the greatest appreciation is due to my husband Alex and to all the family for accepting with tolerance and equanimity my peculiar Hippocratic ‘retirement’.

INTRODUCTION

I. Overview

A. Content

It is recognised that we cannot rely on the titles of Hippocratic works, commonly later impositions, to convey an accurate or even helpful reflection of their content. This may be especially true of anatomical texts, where basic factual information is inherently subject not only to constant repetition and recapitulation but also to a process of refinement or accretion: parallel accounts, differing versions or related material are all liable to be incorporated or appended. The treatise *On Bones*, largely on the subject of vascular anatomy, is just such an amalgam of material with a misleading title, doubtless derived from its inapposite opening. However, both the opening words and the resulting title of *On Glands*—more properly ‘On Glands as a Whole’, or ‘On Glands: A Survey’, or perhaps even ‘On the Lymphatic System’—are unusually apposite.

The term ἄδην ‘gland’ is itself rare. This seems to be reflected in its differing gender already in the Hippocratic works *On Glands* (masculine or, more often, feminine) and *Articulations* (masculine) as well as later: feminine in Rufus, but masculine in Galen. (In LSJ it is erroneously stated that ἄδην is feminine gender as ἡ ἄδην in *Articulations* and masculine as ὁ ἄδην ‘later’; in view of the generally fluctuating usage, it may be suggested that the rare word was always of common or varying gender.) Pollux regards ἄδην as a term used by doctors and, by implication, not by others (Pollux 2. 4. 224): thus, our author’s medical credentials are implicit in the usage. There was evidently uncertainty, even among those who employed the word ἄδην, as to its proper semantic range. The defining description of glandular tissue (1) is not appropriate for the large intestinal glands (5), or for the kidneys and the adrenals (8), and the place of the brain is indeterminate (10).

In popular usage, the anatomical term βουβών ‘groin’ is used by extension for the gland in the groin, and then for other glands, and then

by further extension as a term of pathology applied to a ‘swollen gland,’ not only in the groin but in other locations also, such as neck and armpits or any region subject to visible and palpable swelling. This term too is used in medical texts (for Hippocratic usage, see on 4.2, 8; on Diokles, see on 2.2). The verb βουβωνόομαι (rather oddly rendered in LSJ ‘swell to a βουβών’) is the *mot juste* for glandular swelling; Aristophanes uses the cognate βουβωνιάω as an obscene euphemism for a phallic erection (see on 8). The general looseness in terminology, allowing βουβών to refer to the groin or to a problem affecting it, can be further seen in the term βουβωνοφύλαξ ‘truss for an inguinal hernia’.¹

From even a bald summary, the character of the work can be appreciated. The author’s view of the overall character of glands in nature and appearance is outlined (1); the nature and cause of maladies affecting them is described (2); their distribution and function is indicated (3); an association of glands, moisture and hair is postulated (4); it is allowed that hair is absent from some places where glands are present (5). Particular glandular areas are discussed: the kidneys (6); the neck (7); the armpits and groin (8); the intestines (9, also 5); the head, specifically the brain (10). It is stated that the head may send an excess of moisture in flux to the ears, the eyes, the nose, the throat, the oesophagus, the spine or the hip joint (11); and that the brain itself may be affected by the character and circumstances of this flux (12). The relatively minor hazards of fluxes to the eyes, nose and ears are outlined (13); flux via the oesophagus (to the belly) and via the trachea (to the lungs) and the extreme dangers of flux to the hips are described (14). The final sections have a tangential air: it is noted that the brain may suffer other dangerous maladies, and that these affect the rest of the body also (15); a glandular difference—breasts—between men and women is discussed (16) and the general physiology and pathology of the breasts is adumbrated (17).

The author aims to convey essential information, focusing on the most important glands, rather than to cover the subject of glands comprehensively (7). He makes a serious and wide-ranging attempt to observe the broad anatomy, to understand the underlying physiology, and to account for the general pathology of glands. He presents a lucid account of his main findings, integrating these into current medical theories. Awareness of the existence and function of glands appears sporadically in other ancient medical authors and works (see Introduction III A); but no com-

¹ Lat. *inguen* by contrast seems to have only a local anatomical sense, ‘groin.’

parable account exists. The author's remarkable achievement in addressing and accomplishing such an ambitious enterprise can be more fully appreciated from some awareness of the extraordinary complexity of the topic and of the long process of discovery which underlies modern understanding of the lymphatic system. (See Diagrams 1 and 2, illustrating the lymphatic system of the body and the major glands of the body.) The work was of particular interest to older medical commentators, including van der Linden who wrote in an era and a place (mid seventeenth century Leiden) of major advances in anatomical knowledge and physiological understanding.²

Throughout, the author presents an amalgam of places in the body which he believes to *contain* glands and parts of the body which he believes to *be* glands; but there is some difficulty in distinguishing these, as he seems ambivalent or unclear on the status of the brain and perhaps also the kidneys (though the uncertainty may be scribal or editorial, rather than authorial; on establishing and interpreting the text, see on 6 and 10). In this there is inevitably much confusion, though this gives rise to half-truths rather than outright error. The distinction is fundamentally correct when understood in broad terms as that between glands proper, such as tonsils and adenoids (which might be viewed as major stations on the lymphatic pathways) and lymph nodes, such as the cervical, axillary, inguinal and mesenteric lymph nodes (which might be viewed as minor halts).³ Glands, and clusters of glandular tissue, vary greatly in size. Lymph nodes are not all equally large or equally round, some being oblong, thick or flat; they can be described as small roughly bean-shaped bodies, enclosed within dense connective tissue capsules.

The places believed to *have* glands are defined as bodily 'cavities' and 'joints' and described as places where the body is moist and pliable, and where hair tends to grow (but 'places full of blood' are added, 3, and it is conceded that hair does not invariably accompany glands, 5); specifically ears (4), neck (4, beside the jugulars on both sides), armpits (4, 8), groin (4, 8), intestines (5, 9), kidneys (6). The parts believed to *be* glands are tonsils (7), brain (10) and breasts (17). Salient omissions are the salivary glands; also the testicles (which may however be implied in 4.2) and the ovaries (of which the function was quite unknown).⁴ The specification of

² van der Linden, 1665; see also Ermerins 3, Prolegomena XXX, for succinct observations on the wide-ranging medical content of the treatise.

³ See Fox, 2007, 426, fig. 13.39.

⁴ Cf. Littré 8, 2.

'cavities' and 'joints' reflects the anatomical reality that lymph glands are situated near the great flexures of the body; the specification of moist areas reflects the reality that they are to be found in nearly all tissues which contain blood vessels, but are absent from non-vascular structures such as cartilage, nails and cornea. Important glands are indeed located at the ears (posterior and pre-auricular lymph nodes) and near the jugular vessels of the neck (superficial and deep cervical lymph nodes); those located at armpits and groin are the axillary and inguinal lymph nodes, prominent and palpable when swollen.

It is recognized in general terms that the glands in the intestines are the biggest in the body (5), but their specific location and function receive very cursory treatment. Liver (the largest gland in the body) and spleen (the largest of the lymphatic organs) are surely intended but are not even named. The author may be thinking also of pancreas and duodenum; he seems to know the cystic and bile ducts (by which bile is conveyed from gallbladder to duodenum)⁵ and is evidently familiar with the general concept of bodily drainage (see on emendation, 12.1). In addition, he had surely observed the coeliac and epicolic lymph nodes, which are superficial and clearly visible in (animal) carcasses.⁶ The brain qualifies as a gland, doubtless primarily on grounds of the similarity of brain tissue to glandular tissue, as envisaged at the outset (1), but also on theoretical grounds, as it is moist (and a site of hair growth) and is in addition the starting point of noisome flux to lower parts of the body. No reference is intended to such important glands as the pituitary and the pineal;⁷ these are beyond the author's conceptions.

Modern writers have criticized the author for his misconceptions, erroneous conclusions and omissions. A repeated charge is that he confuses 'glandes' and 'ganglions'—but this is not serious, as the term ganglions seems to be used simply of enlarged glands; or in more modern

⁵ Although closely related to the pancreas and liver, the duodenum is not itself a gland. The bile and pancreatic ducts empty into the second part of the duodenum. The cystic duct is a cul de sac which drains bile from the gall bladder into the bile duct which then in turn empties into the duodenum.

⁶ The coeliac and epicolic nodes are not large in humans: indeed, few lymph nodes are sufficiently conspicuous to be readily visible on the external surface of the intestine. See Whiten, 2006, 85.

⁷ The pituitary and pineal would surely be regarded as merely parts of the brain, which would be viewed simply as grey and white matter.

parlance of structures in the nervous system or of swellings on a tendon.⁸ It is undoubtedly true that the author's anatomical and physiological concepts are of uneven quality: it must be conceded that the work lumps information on glandular locations, some accurate and some inaccurate, together with interpretations of glandular phenomena, some more or less correct and some quite fanciful. However, it is difficult to find a descriptive formulation equally apt to all glands; the attempt is a bold one. Although necessarily unaware of the complexity inherent in bodily balance between fluid in the tissues and fluid in the blood, he nevertheless perceives the essence of this in outline (see on 7.3). Above all, the author has a remarkable visionary conception of an integrated glandular system, in conjunction with some perception (albeit based on erroneous 'observation') that particular glands perform particular dedicated functions (see on 17).

Description is employed rather than definition. Telling use is made of simile ('like wool', 1, 16.2 and 'like dense cloth', 16.2), of graphic detail and of analogy (5). The characteristics of glands are exhaustively and clearly described: they are spongy, fine, fatty, loose-textured, white like phlegm, soft to the touch; they have many ducts and contain oily stuff which is readily dissipated (1). Most of these characteristics are consistent with observation and palpation of the lymph nodes or of glandular tissue, especially of the intestines where chyle is present or of the breasts when enlarged with milk, or of accumulated caseous deposits (such as might be seen in cases of tuberculosis). That the author was accustomed to dissection, or rather to cutting up bodies, is clear from a comment on the appearance of glandular tissue 'if you cut it through' (1), unless this refers rather to the danger of mishaps in surgery. (The word 'dissection' has come to imply human dissection in an environment of scientific discipline; in this author's environment, it is more appropriate to use expressions such as 'cutting up animals' or even 'butchery'.) Similarly, the ensuing comment 'if you work it ... using a lot of force' is appropriate to disinterested investigation of carcasses, not to medical practice. The description of supposed glandular function is managed with equal clarity: the glands attract, or 'draw', moisture to themselves, and so maintain bodily equipoise (3, 4, 9 and throughout). The defining characteristic of all is to absorb superfluous liquid in the body.

⁸ See Littré 550; cf. Jouanna, 1992, 541 and 1999, 393. Joly 110–111 similarly follows Littré's critical approach.

A concern with pathological questions is evident in the frequent occurrence of νοῦσος ‘disease’, πόνοσ ‘trouble’ and related words. The author is clearly a practising doctor, well aware of the limitations of even the best medical knowledge and the most skilled attention to treat the serious conditions he describes; aware also of the importance of understanding underlying causes and of being able to predict the eventual outcome (*prophasis* expressed and *prognosis* implied, 14.1–2). The disorders of the glands are consistently described (2) both in general terms (fever, swelling, inflammation, purulence) and in more particular medical terminology (fever, pustules, scrofula). There is evidence of careful observation (spread of disease from neck to ears, 7; symptoms of breast abscess, 17). Significantly, it is recognized that glandular malaise is systemic and tends to affect the entire body (2); it is indeed a classic aspect of all glandular disease that it passes through the body. An interest in nomenclature of glands (παρίσθημα ‘tonsils’, 7.1; μαστοί ‘breasts’, 16.1) and of illnesses (‘apoplexy’, 12.2; cf. also passing mention of ‘ophthalmias’ or ‘types of ophthalmia’, 13.1, of ‘consumption’ and ‘twisters’ or ‘the twisting disease’, 14.1) is a further indication of the writer’s serious engagement with medical thought. Mental derangement is recognized, and some broad types, of differing seriousness, categorized (12, 15). There is a special interest in embryology and childbirth (17).

To the author, glandular disease is identified by a particular collocation of symptoms: fever, pustules, scrofula (2). Although certain features recurrent in glandular pathology are correctly isolated, these same features might be indicative of many other different conditions. Retrospective diagnosis is always hazardous, and no identifications can be advanced with confidence. The diseases observed are undoubtedly miscellaneous, encompassing many types of infection, both minor and serious (possibly including venereal infection), as well as a range of different inflammatory diseases (especially of the gut, 14.1) and different types of cancer (breast cancer, 17 and perhaps secondary spread to axillary lymph nodes, 8; possibly prostatic cancer, 14.2). However, it is likely that the most common underlying cause of many of the symptoms observed was tuberculosis, or ‘consumption’ as it may more properly be called in eras prior to the discovery of the causative bacillus by Robert Koch in 1882.⁹ The disease was undoubtedly endemic.¹⁰ It is not confined to humans, and may have been observed in scrutiny of animals.

⁹ See Bynum, 2001.

¹⁰ See Grmek, 1989, 177–197; Meinecke, 1927; Baumann, 1930.

The author's treatment of flux to the lung is especially apt as an account of the emaciation, debility and fever characteristic of untreated consumption, which 'eats the lungs' (14.1). The pathology of flux to the spine or hips, as described, is consistent also with tuberculosis: the patient gradually loses strength and wastes away (14.2). It is a fundamental insight that the same disease or group of diseases—φθίναδες 'consumptive maladies' (general) or φθίσις 'consumption' (more specific)—could manifest in different parts of the body. The author of *Articulations* was similarly aware of this: he is concerned primarily with deformities of the spine and the disease as cause of spinal curvature (now known as Potts' disease) but perceives that the lung is its most important locus (*Artic.* 41 [4. 180 L.]). Similarly, in *Internal Affections* three types of *phthisis* 'consumption' are described: in one, the lung is attacked by phlegm, while the legs and feet swell; in another a reaction in the armpits is observed (*Int.* 10–12 [7. 192–194 L.]).

Tuberculosis is still usually classified as pulmonary or extra-pulmonary. In the latter case, it may affect virtually any part of the body, common sites being the lymph nodes, the peritoneum and the bones and joints. In *On Glands* these are all areas believed to be subject to similar affections; the author perceptively postulates different manifestations of the same disorder, but mistakenly attributes to them all the same (glandular) focus. Thus, he is entirely mistaken in his supposition that the symptoms (of consumption) manifesting in pulmonary and osteo-articular sites are all glandular. His pathology, like his anatomy and physiology, is flawed and uneven—yet demonstrates remarkable clinical intuition. Similarly, the great chest physician Laennec (1781–1826) was to argue—long before the discovery of the underlying aetiology, which now defines cases of tuberculosis—that the pathological lesion called the 'tubercle' was part of the same disease no matter which organ contained it. Conversely, many troubles of glandular origin were not recognized as such: thus, the συστροπικόν 'coagulative' swelling of the neck described in a passage of *Epidemics* (*Epid.* 6. 3. 6 [5. 294, 296 L.]) is surely glandular, possibly the enlargement of the thyroid popularly known as goitre.

Though evidently a practitioner with a wide interest in disease, the writer has interests in theory also; he is familiar with and in the course of his work deploys many ideas about the function of the body. Some were doubtless in general circulation: theory of flux, flow and saturation (throughout), theory of the importance of bodily balance and avoidance of excess (4); theory of the part played by pressure, coagulation and blockage in bodily function or malfunction (16); theory of the existence

of bodily pathways and interconnections (2, 4, 16 and throughout); theory that every part of the body requires its own peculiar 'nourishment' (4); theory that the body has an autonomous ability to correct itself (10); theory that teleology underlies bodily composition and function (4); theory that matter tends to move from narrow or restricted to wide or open spaces in the body (16 and throughout). A core element is that of reciprocal relations between glands and τὸ ἄλλο σῶμα 'the rest of the body', a much repeated phrase (1, 2 *quater*, 4, 7, 12, 16 *bis*, 17): the body 'sends out' any surfeit of moisture and the glands in turn 'draw' and 'receive' this. Pressure, especially pressure effecting spatial change, is an important precipitating factor; and it is consistently supposed that empty space tends to be filled. A pervasive underlying notion is that of flux from upper to lower body: the incidental adverb ἄνωθεν 'from above' (3, reiterated in ἄνω, 7.2) is a significant early indication of this general point of view. Two types of flux are allusively indicated, shallow coming from the region of the scalp and deep issuing from the brain (7.2). Matter not expelled 'outside' but retained 'inside' is harmful. Flux to the spine (and beyond) is described as carried by the spinal fluid, here incorrectly aligned with glandular or lymphatic function. In this respect, the author's adherence to general flux theory sits awkwardly with his particular theory of glandular function. But an attempt is made to adjust and to integrate the former with the latter: thus, the tonsils are ingeniously said to arrest and contain downward flux (7.2; cf. also on 11).

Some of the author's ideas are more individual: theory of an association between hairs and moisture (4); theory that there is a deep underlying analogy between plant and human growth and between body and earth (5); theory that there are significant differences in texture between the male and female body (16). In all this, there is some evidence of observation, but there is a tendency to privilege observation serving or seeming to confirm an already formulated theory (see on 4, 16–17). Some of his ideas are given idiosyncratic expression: theory of quasi-political compact between bodily parts (9) in conjunction with ideas of reciprocity in aspects of bodily function. There is some humoral theory, obliquely expressed. Phlegm, associated in a significant definition of *phlegmone* 'phlegmy matter' as static moistness (7.2) and in general with excess in quantity is explicitly implicated in flux (14.1); where more than one type of fluid is involved the other seems to be bile, perhaps specifically black bile, associated with an abnormality in quality (7, 8, 12). It seems to be supposed that phlegm-moisture is always present

and becomes problematical when present in excess; the more serious problem of bile is one of quality, not quantity. It seems to be suggested that phlegm can mutate into bile, through an intermediate state of pus or other such matter. But total consistency cannot be imposed on the work: ultimately, types of moisture are not sharply differentiated (see on 14.1; also on 7.3, indeterminate connotation of the adjective δριμύ 'pungent').

Despite its many inaccuracies when viewed on modern terms, this short treatise is often correct, or nearly so, or wrong in ways which are explicable. It can be viewed as a remarkable visionary conjunction of theory and practice. Although the author maintains an unswerving fidelity to a theoretical physiology with notions of fluid motion in the body—both in relation to the standard general idea of flux from the head and in relation to a more peculiar specific idea of bodily interchange and equipoise—his work is clearly based also on some anatomical knowledge and much clinical observation. It is not surprising that he lacks a true perception of the identity and location of all glands and of all lymph nodes (which are still often loosely classified as glands) or a true awareness of their importance. However, in his own special interpretation of the general theory of bodily flux, with regard to 'glands' as he conceives them, he does show a remarkable grasp of important anatomical and physiological concepts, especially that of essential bodily drainage. In addition, the pathological content is remarkable for the range, depth and essential accuracy of its observations.

With regard to the value of the content, specialists in human anatomy and histology, writing in the journal *Leukemia* for 2007, may be allowed the last word, 'The first document on the anatomy and physiopathology of lymphoid tissue is to be found in the Hippocratic treatise 'On glands' ... a milestone in the history of haematology and clinical immunology ... The modern scientist stands amazed before the innovative concepts expounded in this ancient medical document. Indeed, the functional anatomy of the lymphatic system and lymph nodes emerges with impressive precision ... the author provides an absolutely modern interpretation of their physiopathological significance ... Three fundamental concepts concerning the physiopathology of lymph nodes and lymphatic vessels come out ... First, the lymphatic system is made up of lymphatic vessels and the glands through which they pass. Second, the drainage function of lymph glands is firmly established. Third, their involvement in inflammatory processes and systemic diseases is also foreshadowed ... 'On glands' is a great book. Its author should be recognized as a far-seeing pioneer

in haematology and medical sciences. He shaped some basic concepts, which represent still common wisdom in today's medical reasoning.¹¹

In certain aspects the content of *On Glands* is unique, not only in the HC but in all of ancient medicine. But in other aspects, it is found to mesh with the content of a body of texts already, since Littré, regarded as a coherent group: *Generation-Nature of the Child, Diseases* 4. These affinities are discussed in Introduction II and throughout the Commentary.

B. Expression

Littré comments on the author, 'l'auteur de cet opusculé n'a pas un style franc et net'; and he finds the writing to be 'dans un style qui n'est pas sans quelque recherche'.¹² These comments are apt. The style is a curious amalgam of terse, functional expression on the one hand and flowing poetic idiom on the other. Although the former, with its repeated parataxis and elliptical expression, might seem indicative of the spoken word (consistent with, but not necessarily confirmed by, use of the substantive λόγος and verb λέγω 4.1, 7.1, 10, 14.2), the latter, with its considerable degree of elaboration, surely suggests a written text (indicated by γράφή, 7). The author uses the pronoun μοι twice, in both cases of his own preceding words (8 and 14.2). It is possible that the work originally formed a 'lecture', or notes for a lecture, subsequently revised and at least partially written up, intended for wider circulation.¹³ This might account for the uneven and discrepant style.

Although the piece is very short, it seems to be complete as transmitted. The ending (16–17) addresses a new topic, but one closely related to what has preceded; furthermore the work is structured in a kind of ring composition with initial ideas and expressions repeated finally, the difference being only that, while at first glands are described in general terms, the conclusion relates exclusively to the female body, viewed in glandular terms (see on 1 and 16–17). Such an apparent change in focus can be seen in other Hippocratic texts. The treatise *Places in Man*, like *On Glands* (16–17), concludes with an excursus on gynaecology; the treatise *Diseases* 4, like *On Glands* (15), appends miscellaneous comments on

¹¹ Crivellato, Travan and Ribatti, 2007, 591–592.

¹² Littré 8, 570, n. 10 and 8, 572–573, n. 8.

¹³ See Joly 1970/2003, 11 on traces in Hippocratic texts of such ἀρχοάσεις 'performances'.

unusual pathology. The tone of the ending is somewhat more assertive than that of the earlier chapters, as if the author regards his argument as controversial and anticipates disagreement. And indeed some special pleading is involved to assign a glandular character to breasts, aligning them with the glands already discussed.

Despite an evident proclivity for the recondite and striking in expression (discussed below), the author has a liking for simple syntax and for compound sentences: clauses are linked by ‘and’, sometimes in a rather breathless sequence (2, 3, 15). Such paratactic preference is typical of archaic prose.¹⁴ The frequent occurrence of similes and analogies too (especially in 1, 5 and 16) is striking, though not uncommon in anatomical description. Despite the use of ornament, sense is never subordinate to style, and in matters particularly important in the argument the author has recourse to a bald itemizing manner (salient characteristics of glands, 1; number and nature of fluxes, 11). There is a tendency, as in much early prose, to otiose and unaesthetic repetition of pronouns (especially oblique cases of αὐτός, as 1, 3, 9, 12; also ταῦτα, as 4.2). Expression is frequently in an abrupt sequence of short clauses, with some use of participles in place of main verbs (4.2, 6, 14) and much ellipsis of easily supplied words, especially parts of the verb ‘to be’ (1, 3, 4.2, 12.1, 13, 14.1). Such omission of words readily supplied suggests rapid writing in note form rather than careful composition in finished polished style. Other forms of literary ‘shorthand’ are compendious comparison (8) and the economical placing of introductory words outside the syntax (15).

But overall, expressions indicative of literary awareness, even indeed literary pretension, abound and there is a decided rhetorical tinge: gnomic aorist (14.2); chiastic structure with emphasized word at the end of one and the beginning of a following clause (τράχηλος, 7); otiose *variatio* of incidental word (ἐνθα ... ἐνταῦθα, 4). And the triadic expression so characteristic of rhetorical writing is favoured: frequently three linked and almost synonymous verbs or substantives are used where one or two would suffice (see on 7). Alliteration and anaphora are deployed (ἀποσῆπεται καὶ ἀποπνίγεται, 5.1; ὅπου ... ἐκεῖ καὶ repeated, 4.1; βιῆται repeated, 5.1–2; emphatic ποιεῖ repeated, 11). Balance of syllables, sound and sense in parallel clauses is found (καὶ ἦν ἀγαθὸς καὶ ἦν ἀγχίνους, 14.1). The metaphorical use of τιμωρέειν ‘avenge’, 10 and 13.1,

¹⁴ See Joly 110 on the ‘καὶ-Styl’; Joly finds archaic elements especially in 7, 14, 16.

is bold. In its general features, then, the work defies ready classification: it has rough elements suggestive of oral intent alongside mannerisms which suggest written composition; it has some archaic syntactical features alongside sophisticated rhetorical devices. On the basis of these rhetorical aspects alone, it would be reasonable to suggest a date in the late fifth century.

However, features peculiar to the author can be isolated. There can be no doubt that he is striving to present a clear and logical account of subject matter which is inherently complex. The persistent presence of forced and mechanical elements in the style can perhaps be attributed simply to an over zealous striving for clarity and emphasis in scientific exposition. The logic in arrangement and argument is frequently excessively pointed, with a marked tendency to recapping and resumptive expressions; this is an important key to authorship (see Introduction II below). There is a particularly dense collocation in one passage, 7.1, where the author declares in rapid succession both that he does not wish to digress and that he will return to his theme (οὐ βούλομαι ἀποπλανᾶν τὸν λόγον followed by νῦν δὲ ἀναβήσομαι τῷ λόγῳ καὶ ἐρέω) as well as many instances elsewhere: he reminds us of what was previously said, 4.1 (ὥς καὶ ἔμπροσθεν εἴρηται); he tells us that he has said enough about a particular aspect, 8 *fin.* (καὶ ταῦτα μὲν ἀμφὶ τῶνδε); he dismisses a topic very explicitly, 14.2 (ταῦτά μοι περὶ ῥόων ἀπὸ κεφαλῆς εἴρηται).

Related features are the placing of somewhat mechanical stress on the logical course of the argument (διὰ τὰ εἰρημένα μοι, 10; οὕτως ἀναγκάζει ὁδε ὁ λόγος, 16.2) and the flagging of significant considerations regarded as 'proof' (σημεῖον, 4.1) or conclusive 'evidence' (μαρτύριον, 17). A self-conscious, somewhat pedantic, air is apparent also in the repeated use of 'thus' or 'and thus' (οὕτω, 2.2, 3, 4.1, 7.3, 12.1, 13.2; ὥδε, 1, 8, 14.2); also in the use of clauses indicating the consequences of the preceding argument introduced 'so that' or 'for so that' (ὥστε or ὅστε γάρ); he draws attention to similarities and parallels as he sees them (8, 9, 10, 17.1). Throughout, much use is made of γάρ 'for' as a connective; and of such logical forms of expression as antithetical μὲν ... δέ (3, 4.1, 7.3) or the more emphatic μὲν ... ἀλλά (8) and also of οὔτε ... οὔτε or οὐ ... οὐδέ. In this way, antithetical phrases and clauses, inessential to the sense and at times detrimental to clarity of exposition, are piled up. A similar expository habit is seen in a use of exhaustive expression through alternatives or of otiose qualification; these ponderous comprehensive phrases convey a superficial but somewhat spurious air of precision (see on 'more or less', 3; cf. 5, 6, 11).

The ideas presented are consistent and consistently expressed. At the same time, there is much stylistic *variatio* in terminology. In translation and commentary, an attempt is made to reflect this. The various adjectives used to qualify glands, and applied also to female flesh, are distinguished by consistent translation: ἄρραιός ‘fine’ (1; 16.1, 2 *bis*); ψαφαρός ‘loose-textured’ (1, 10); μαλθακός ‘soft’ (16.2 *bis*); they are distinguished also from the related descriptive terms ἀπαλός ‘yielding’ (4.2); χαῦνος ‘flabby’ (16.2 *bis*); σπογγώδης ‘spongy’ (1); and πίων ‘fatty’ (1). In this author there is an extraordinarily wide range of different terms even for key concepts, including poetic or picturesque words surely chosen for effect (see on αῦον, 4.2). Thus, moisture is variously ὑγρασίη (2.1, 3, 5.2, 6, 7.2, 8, 9, 10, 16.2), ὑγραδών (3), πλάδος (3, 5.2), τελματώδεα (4.1); also expressed by the adjectives ὑγρόν (5.2, 7.3) and κάθυγρον (4.2, 5.1). Choice between near synonyms may seem a matter of indifference, but it can be significant. (The term ἰκμάς does not occur; see further Introduction II below.) There are similarly varied terms for the ubiquitous concepts of ‘excess’ (4, 5, 8, 9, 12, 16, 17) and of ‘flow’ or ‘flux’ (2, 7, 10, 11, 12, 13, 15). Two forms of the verb ‘remove’ are used: ἀποστερέω (10) and ἀποστερίζω (17); there is wordplay on ἀποστερέω and ἀποστέλλω (10). Different terms are applied to bodily ducts: τεῦχος (5.2, 17), ὀχετός (6) and ὁδός (13.1). Bodily swelling is variously expressed by the verbs αἰίρω (2.2, 6.1), ἀνοιδίσκω (7.3) and οἰδέω (13.1) and bodily constriction by both τείνω (2.2) and συντείνω (2.2, 7.3).

The author’s flexibility in precise and delicate use of verbal prefixes is particularly careful and surely deliberate (see on 12.1). The different compounds ἀναπέμπειν and ἀποπέμπειν (7.2, 12.1); ἐκδέχεσθαι, ἐπιδέχεσθαι and ἐσδέχεσθαι (3, 5, 12.1); ἀποπιέζειν, ἐκπιέζειν and ἐμπιέζειν (5.2, 13.2, 14.1, 16.1); ἀφίεναι, καθίεναι and μεθίεναι (3, 5.2, 7.2, 17); ῥεῖν, διαρρεῖν, ἐπιρρεῖν and συρρεῖν (2.1–2, 3, 4.1, 6, 7.2, 12.1, 13.2, 14), with in addition ῥύειν and ἐπιρρύειν (7.3, 14.1), are subtly and significantly different in semantic—and scientific—nuance. The same care in composition is evident in vocabulary, where there is a marked preference for unusual and *recherché* elements, either through verbal coinage or through mannered borrowing (θρύπτεσθαι, 1; ἀναπηδᾶν, 2.1; καταναίσιμοῦσθαι and ἀπαναίσιμοῦσθαι, 3 and 9; ἐκβράσσεσθαι, 4; λύματα, if correct, 12; σπάθη, 14.2). Throughout, the writer seems to be self-consciously straining after effect; an artificial poetic idiom is paraded in the use of the poetic verbal form ἔνι, 3 and in uncommon terms in place of common ones, such as παῦρα, 2; πῆμα and ἄλλοις, 12; ὄλλυμαι, 14. In addition to this sporadic appearance of flowery language, there

is a striking snatch of lyric verse, possibly an original composition, but more probably a citation from a lost tragedy, in the discussion of mental derangement (12.2).

A similar penchant for linguistic novelty is apparent in the repeated use of irregular alpha privative formations: ἐν ἀκηδίῃ, 12.2; ἀσύστροφος, 13.1; ἀσυνετέω, 14.1; ἀστεργής, 16.2. At the same time, there are many ‘medical’ adjectives in -ώδης, some being coinages: ἐλαιώδης, 1; αἱματώδης, 3; τελματώδης, 4; δυσώδης and θανατώδης, 13.2. Some further distinctive peculiarities in the style demonstrate affinities with the gynaecological works of the HC: use of diminutives (σαρκίον, 1; σπιόν, 9); use of the dual number (not only, as is regular, of bodily pairing such as feet and thighs, 14; but also artificially imported in the portentous phrase δύο ἐστὸν κακία ‘there are two evils’, 12). Some particular vocabulary (such as μελεδαίνεσθαι, 14.2) evinces the same association with the language of the gynaecological texts. The repeated use of indirect reflexives in place of personal pronouns (σφέας, 2; σφετέρην, 11; σφίσι, 13; σφέας, 16) is marked. Some Doric elements obtrude (ὥστε for ἄτε, 3.1; see also on βιῆται, 5).

Some salient oddities, present in *On Glands*, are found in a few other Hippocratic works, already viewed as linked in authorship. Among the most striking of these is the use of the common verb πονέειν ‘suffer’ in a very uncommon way, transitively and so conveying the sense ‘give trouble’ as well as the sense ‘have trouble’ and in passive as well as active forms; thus, we see use of the middle form πονέεσθαι rather than the active form πονέειν in the sense ‘suffer’ (see on 2). In syntax, a telling stylistic quirk is to favour a remarkable variation in conditional clauses: after a first protasis with εἰ and the optative, a second is expressed by ἥν with the subjunctive. This is so strange that it looks like a solecism (see on 12.2). Alongside these curious grammatical and syntactical features, there are many less peculiar but still defining persistent linguistic and stylistic mannerisms. The implications of these traits for authorship are discussed in the next section. It is argued, on the basis of cumulative evidence in content and style, that the author of *On Glands* is identical with the author of *Generation-Nature of the Child* as well as *Diseases 4* and a considerable body of material in the gynaecological texts transmitted in the HC, including the short pieces *Diseases of Girls* and *Infertile Women* (*Virg.* and *Steril.*).

II. *Place in the Hippocratic Corpus*

Incidence of the term ἄδένες ‘glands’ in the HC is confined to *On Glands* itself, to a single occurrence with reference to the ear in a brief case history of *Epidemics* (*Epid.* 4. 42 [5. 184 L.]), and to *Articulations* where it is five times repeated in a short passage noting dangers inherent in practising cautery in the glandular region of the axilla (*Artic.* 11 [4. 108 L.]) and followed by the remark, ‘In another work there will be an account of glands as a whole, what they are and what sort of things they signify and can effect in what parts of the body’. The more common term βουβών or, frequently plural, βουβῶνες ‘groin’, hence ‘gland in the groin’, hence ‘gland’ or ‘swollen gland’ elsewhere in the body does occur with some frequency in both medical and literary writers (see on 4, 8; also Introduction I A above and III A below). It is obvious that common ground is inherent in the subject matter of *On Glands* and *Articulations*: the two main sites of glands in the body are defined in *On Glands* as, firstly, ‘hollows’ or ‘cavities’ and, secondly, ‘joints’ or ‘articulations’ (see on 2) and among the latter, the importance of the axilla is recognized (4.2, 8).

Much comment has centred on the above passage of *Articulations* and in particular on the statement of intent to write on glands as a whole: the phrase ‘on glands as a whole’ occurs at the very beginning of our treatise (see on 1) and is repeated later, with reference to all the glands in the neck (7); it occurs too in the version of the title given in ms V. In commenting on *Articulations* Galen noted, ‘Such a book of Hippocrates on glands as a whole is not extant. But one of the later Hippocratics wrote a short treatise with the superscription “Hippocrates: on glands as a whole”’ (*Hippocratis de articulis liber ... commentarii*, 18A. 379 K.). Galen judged the work far short of true Hippocratic writings in both expression and thought (καὶ τῇ λέξει καὶ τῇ διανοίᾳ) and stated, wrongly, that ancient reference to it is lacking. Galen’s judgment is subjective and his statement on the tradition erroneous, but as ever his authority commands respect. Galen himself has very little to say on the subject of glands (see Introduction III A below).

Modern critics have tended, more or less forcibly, to endorse Galen’s judgment, some of them having recourse to such strongly worded condemnation as ‘forgery’ and ‘imitation’. Littré regards the work as late and relegates it to his ‘huitième classe’, while elevating *Articulations* to the ‘première classe’: consequently *Articulations* is placed by Littré in his volume 4 (1844) and *On Glands* kept back to lowly volume 8 (1853). Ermerins argues, on the basis of common vocabulary, for unity of

authorship but then (a lone voice) treats *Articulations* as well as *On Glands* as late. Diels, Heidel and Mørland discuss the similarities and differences in language and conclude against unity and for lateness; Withington concurs closely with Galen's view that the piece is a late attempt to plug a perceived gap; Joly argues that the authors of *Articulations* and *On Glands* are not the same, but nevertheless dates *On Glands* to the late fifth or early fourth century; Potter believes that '... the *prima facie* case favours unity of authorship' but ultimately comes out as 'a weak unitarian, leaning towards agnosticism'. Rodriguez Alfageme argues firmly for a late date on the basis of language.¹⁵ It is impossible to establish the case conclusively on linguistic evidence alone—and especially so on selective linguistic evidence. Circular argument is all too easy. For instance, it might readily have been supposed from the incidence of the rare word οὐλομελίη in the *Letters* (*Ep.* 18 [9. 382 L.]) that its presence in *On Glands* indicated 'lateness', but for its occurrence also in *Articulations*, supposedly 'early'.¹⁶

The argument for a connection of some sort between the two works rests first on the key expression 'on glands as a whole' and then on other phrases or words, more or less unusual, occurring in both. In vocabulary, the most striking coincident elements are: κατασιμοῦσθαι (see on 3); κορίσκεσθαι (see on 6, 14.1); ἀποπλανᾶν τὸν λόγον (see on 7.1); τιμωρεῖν (see on 10); ἀσυνετέειν (see on 14.1). Some of these similarities do not stand up to close scrutiny. For instance, usage of the verb κορίσκεσθαι in *Articulations* is metaphorical, not literal as in *On Glands*. A connection has been seen in two apparently parallel passages. In *On Glands*, the statement is made ἀδένες δὲ ὑπείσιν ἐν τῷ σώματι πλείους ἢ μέζους ἐν τοῖς κοίλοις αὐτοῦ καὶ ἐν τοῖσιν ἄρθροισι 'glands are present in the body in greater number or greater size in its cavities and its joints' (3.1); in *Articulations* it is stated just before the passage cited above ἀδένες ὑπείσιν ἢ ἐλάσσους ἢ μείζους πᾶσιν ὑπὸ τῇ μασχάλῃ, πολλάχῃ δὲ καὶ ἄλλῃ τοῦ σώματος 'glands, smaller or larger, are present in all people in the armpit and in many other places in the body' (*Artic.* 11 [4. 108 L.]). Not only are the two statements different in their reference, *On Glands* alluding to specific glandular locations (in the body, cavities

¹⁵ See Littré 1, 434–435; Ermerins 3, XXX–XXXI; Diels, 1910; Heidel, 1914; Mørland, 1941; Withington, 1928, 227; Joly 110–111; Potter, 1995, 106–107; Rodriguez Alfageme, 1991 and 1992. See also Craik, 2002, 287–289, especially at 288 n. 3.

¹⁶ On the meaning and incidence of the substantive and cognate adjective, see Craik, 2006, 149–150.

and joints) and *Articulations* to general glandular locations (in everyone, axilla and many other places), but there is a difference too between the sense of the linked adjectives, *On Glands* being concerned with number and size, *Articulations* only with relative size. (It might be possible to understand the phrase in *Articulations* to convey ‘in lesser numbers or greater size’; but this would be a very odd expression.) More significantly, when we note that the key phrase ἢ ἐλάσσους ἢ μείζους πᾶσιν is absent from the Galenic citation, our earliest evidence for the text, it appears that the only close similarity lies in the verb ὑπείσιν used of glands.

The assumption has always been made that, if there is one author, *Articulations* must be the earlier of the two works; however, this assumption is not necessarily valid. And the focus of debate on the question of single authorship for *Articulations* and *On Glands* has obscured the fact that, as will be seen below, *On Glands* has connections with other works no less than, and indeed in some cases much more than, with *Articulations*. A significant point against unity of authorship is that the gender of ἀδὴν is masculine in *Articulations* and varies, but is usually feminine, in *On Glands* (see on 1). This militates also against the ‘forger’ theory: no competent forger would perpetrate or overlook such a discrepancy. If there truly is a connection between the two works, a range of different possibilities might be invoked to explain it: common source or common affiliation with extension, refinement, collaboration or indeed imitation without intent to deceive. And an author embarking on a project might be inclined to read or reread an earlier work on a related subject, and might then deliberately or inadvertently repeat some of its idioms and catch-phrases. This alone might account for the occurrence in both works of idiosyncratic elements in vocabulary, such as the unusual verb καταναίσιμιοῦται (3).¹⁷ At the same time, it is true that certain elements in both vocabulary and content are common to *On Glands* and *Fractures*, allied with *Articulations* (see on 4, 7, 8, 10, 12). These parallels are scarcely such as to constitute evidence for common authorship. But there is inevitably a subjective element in such judgments.

In terms of common ideas, possibly reflecting common clinical experience, *On Glands* and *Articulations* contain further elements not (I believe) previously noted; though arresting, these are not unique to these two works. Both make much of moisture and attach special importance to moisture in the joints (see especially *Artic.* 8 [4. 94 L.] and 40 [4. 172 L.]

¹⁷ On the verb, see Littré 4, 108–110, n. 21.

and cf. *Gland.*, especially 3 but *passim*). Both regard such moisture as potentially harmful (see especially *Artic.* 40 [4. 174 L.] πλαδαρά ... μυξώδεα ... ὅσα δὲ ὑδατώδεα χωρία ἐστὶν ἢ μύξης πεπληρωμένα and compare *Gland.* 3 τελματώδεα χωρία). Both are familiar with ear abscess (*Gland.* 3 and *Artic.* 40 [4. 172 L.]). In *Articulations*, injury to the ribs, where important ὀχετοί and τόνοι (bodily links, respectively hollow and solid) are situated, is said to result frequently in the symptoms of cough, tubercle and suppuration; in *On Glands*, the latter two are classic symptoms of glandular trouble, in similar locations (*Artic.* 50 [4. 218 L.]; cf. *Gland.* 2). Perhaps most tellingly, in proposing to discuss spinal and hip deformities in a future work on chronic lung disease, the author of *Articulations* shows an awareness of the systemic character of a disease with its primary situation in the lung but affecting the bones and joints also (*Artic.* 42 [4. 182 L.]); similarly the author of *On Glands* was evidently familiar with the effects of glandular problems on the body as a whole (2) and with manifestations in both glands and joints of a single disease. That this disease can be identified with consumption or tuberculosis (especially in 7) is suggested above (see Introduction I A).

A comparison of the language and thought of *On Glands* (dismissively disparaged by Galen) with the language and thought in other treatises generally viewed as early, authentic or in some way canonical reveals a wide range of coincident elements. *Ancient Medicine*, the first work in Littré's 'première classe' and alone placed in his first volume (1839)¹⁸ tends to be reverentially regarded by others also. The work ends with general remarks on the shape and texture of different parts of the body and on the qualities of different kinds of bodily moisture, in relation to the cause of disease. An important aspect is that some are inclined to 'draw' moisture to themselves. Among the adjectives used of bodily texture the terms 'spongy', 'soft', 'porous' are recurrently opposed to 'hard' and 'dense' (as especially *VM* 22 [1. 626, 630 L.]; cf. *Gland.* 1, 16). The parts which 'draw' moisture to themselves from 'the rest of the body' are 'hollows', specified as the bladder, the head and, in women, the womb (*VM* 22 [1. 628 L.]; cf. *Gland.* 2, 3, 4, 7, 9, 10). Spongy porous parts, which absorb moisture and enlarge, are the spleen, the lungs and the breasts (*VM* 22 [1. 628 L.]; cf. on intestines *Gland.* 5 and on breasts *Gland.* 16–17). The idea that moisture might not find a 'seat' (ἐδρην) where it could remain is expressed (*VM* 22 [1. 628 L.]; cf. *Gland.* 7.2). The character

¹⁸ Littré 1, 434; see also Jouanna, 1990/2003 and Schiefsky, 2005.

of the liver (soft and bloody) is discussed; it is a part (χωρίον) prone to painful, suppurative and ulcerative conditions (VM 22 [1. 632, 634 L.]; cf. *Gland.* 2.1, 3, 8, 17). At the end of the work, a general theoretical model is advanced, suggesting that illness arises from interaction between parts of the body and fluids in the body (VM 22–24 [1. 626–636 L.]): the work is more sophisticated in its postulated pathology than *On Glands*, though less so in anatomical terms. In addition, *Ancient Medicine*, like *On Glands*, makes an association between πόνοι and νόσοι (1–3); stresses the importance of bodily balance (5, 9, 19); and regards δορυ as an ulcerative quality (18–19).

Another work commonly viewed as ‘early’ is *On The Art*, controversial because of its philosophical and rhetorical content, and generally dated to the fifth century.¹⁹ Here, the writer seems to be familiar with the concept of glands: he discusses in conjunction the two glandular areas as defined in *On Glands*, cavities and joints, yet cleverly presents his ideas allusively in simple and readily comprehensible language (*Art.* 10 [6. 16, 18 L.]). The background is a discussion of ‘clear’ (seen, recognised, external) and ‘unclear’ (unseen, unrecognised, internal) diseases. Similar distinctions are made by Aristotle, in connection with bodily parts which are γνώριμα ‘known’ or ἄγνωστα ‘unknown’, the latter being ἐντός ‘internal’ (Arist. *HA* 1. 16, 494b; cf. 1. 17, 497b). The author of *On The Art* is concerned with the latter, the ἥσσον φανερά ‘less visible’. Such diseases are defined as twofold ἃ πρὸς τε τὰ ὀστέα τέτραπται καὶ τὴν νηδύν ‘which are turned to bones or cavity’; and the two types—which correspond to the joints and cavities of *On Glands* (see on 2)—are then discussed, essentially in reverse order.

This use of the term νηδύν in *On the Art* is recognized to be odd by Erotian, who glosses Ν 9 νηδύν· οὕτω καλεῖ πᾶσαν κοιλότητα ‘he gives this name to any hollow place’; the gloss is confirmed by the author’s own explanation that the body has more than one cavity: in addition to the two which ingest and excrete food (sc. the ‘upper’ and ‘lower’ cavities in ubiquitous prescriptions of emetics and laxatives) there are cavities ‘which those who have been concerned with such matters know’. While indicating that the knowledge is specialised, he nevertheless explicates it in general terms. All limbs (arms, thighs, calves) have a κοῖλον ‘hollow part’. Also, the places of the body where the liver is situated, where the brain is situated, and where the lung is situated are said to be πολλῶν

¹⁹ On authorship and date, see Jouanna, 1988, 179–183 and 190–191.

διαφυσίων μεστόν ‘full of interstices’ (spongy) and to have ἀγγεῖα ‘ducts’ which contain healthy or peccant matter. From hollows or cavities, the author goes on to deal with joints, explicitly defined as σύνδεσμος ... τῶν ἄρθρων, καὶ αὐτὰ τὰ ἄρθρα ἐν οἷσιν αἱ συμβολαὶ τῶν κινεομένων ὁστέων ἐγκυκλύονται ‘the linking of the joints, and the joints themselves where the conjunctions of the moving bones meet’; all of these matters are ὑποφρον ‘secret’, that is ‘arcane’. The term itself is arcane, but help comes from Erotian Υ 10 ὑποφρον· κρυφαῖον.²⁰ The joints are then said to have θάλαμας ‘chambers’, ‘ducts’ containing *ichor* which comes out in copious amounts ἐκδιωγομένων αὐτέων ‘if they are opened’ (technical term of surgical excision, cf. *Gland.* 1).

The treatise continues with some general remarks on the difficulties inherent in diseases not quickly discerned (ἐν τῷ μὴ ταχὺ ὀφθῆναι) and the character of medical research and knowledge. The notion of innate phlegm (τὸ σύντροφον φλέγμα) occurs also (*Art.* 12 [6. 24 L.]; cf. *Gland.* 4). There is further allusive reference to physiological concepts identical to those presented in *On Glands* in the reference to an ἀπόκρισις ‘secretion’ which may be ‘moist and phlegm-like’ and be expelled (that is, as sweat) ἔξω ‘outside’ (the body) or involve (sc. black) bile and go εἰσω ‘inside’ πρὸς τὰ κοῖλα ‘to the cavities’; in the latter case, there is danger of mental derangement (*Art.* 11 [6. 22 L.]; cf. *Gland.* 12). From these considerations, it is evident that a sophisticated anatomical knowledge, extending to the lymphatic system, is implicit in this ‘early’ work.

In two other texts generally believed to be of fifth century date—*Airs, Waters, Places* and *The Sacred Disease*—the deleterious effects of flux from the head are described in ways similar to *On Glands*. In *Airs, Waters, Places*, a flux of phlegm can render older people παραπληκτικούς (*Aer.* 3 [2. 18 L.]; cf. the definition of ἀποπληξίη, *Gland.* 12). In *The Sacred Disease* bile and phlegm affecting the brain induce different types of mental disorders (*Morb. Sacr.* 15 [6. 388, 390 L.]; cf. *Gland.* 12), and when there is a flux to the chest (variously καρδίη and πλεῦμων) the result is ‘destruction’ there (διαφθίρεται) and some sufferers become hunch-backed (κυφοί): as in *Articulations* and *On Glands*, the systemic character of consumptive chest disease is recognized (*Morb. Sacr.* 6 [6. 370 L.]; cf. *Gland.* 14.2). Further similarities are references to embryological development (*Morb. Sacr.* 5 [6. 368 L.]), to the idea of unnatural

²⁰ Jouanna, 1988, 260–261, n. 8 needlessly disputes this reading and sense, preferring instead ὑπαφρον ‘foamy’ (‘écumeuse’); on this and other variants see Nachmanson, 1917, 341–342.

‘flooding’ and to the ideal of ‘separating out’ peccant matter. In addition to these doctrinal parallels, there are certain parallels in approach to and presentation of arguments (discussed below). It has been suggested that the block of texts comprising *Generation-Nature of the Child and Diseases* 4 was closely inspired by *Airs, Waters and Places* and was the origin in turn of *On Flesh*.²¹ Such an approach may attach too much importance to modern ideas of scientific priority. It is difficult to reconstruct the chronology of composition, when we cannot know even whether writers worked independently or in groups, or by what means they exchanged ideas.

There are general references to glandular symptoms in aphoristic texts (for example, *Aph.* 3. 26 [4. 498 L.], *Coac.* 4. 502 [5. 700 L.]). Practical awareness of glandular troubles is evident, and their systemic character appreciated, in the case studies of *Epidemics*. Thus, pain is regarded as extending through the body and progressing to the lower limbs (*Epid.* 4. 42 [5. 184 L.]; cf. *Gland.* 14); the glands are viewed as possible source of general malaise (6. 3. 20 [5. 302 L.]; cf. also 6. 7. 2 [5. 338 L.]). In *Internal Affections*, the outline of three types of *phthisis* presents many similarities to the nosological account of *On Glands* (*Int.* 10–12 [7. 192–194 L.]; cf. especially *Gland.* 14). Both *Nutriment* and *Regimen* 1–4, concerned in different ways with τροφή ‘nutrition’, express in more abstract fashion ideas meshing with those of *On Glands* (see on 3, 5, 11, 13). In particular, views of πόνος ‘exercise’ presented in *Regimen* correspond to those presented in *On Glands* (*Vict.* 2. 66 [6. 584 L.]; cf. *Gland.* 3). Some similarities in both vocabulary and nosological description appear in *Prorrhetic* 2 (see on 2, 4, 14) and *Prognostic* (see on 2.2)

Stronger resemblances still can be seen between *On Glands* and *Places in Man*. The works are similarly structured, both beginning with general remarks on bodily nature and both ending with an excursus on gynaecology. In *On Glands*, *phlegmone* is defined as ‘static moisture’ (στάσιμον ... ὑγρόν, *Gland.* 7); the same idiosyncratic usage can be seen throughout *Places in Man*.²² The view that illness is precipitated by a flux of fluids, occasioning saturation in particular parts of the body, is similarly expressed in terms of στενοχωρή and εὐρυχωρή parts which are ‘narrow’ and ‘wide’ and this term χωρὶον ‘part’ is repeated (*Gland.* 3 with *Loc. Hom.* 9 [6. 292 L.]); dry parts benefit from fluid motion (see on 4). Other unusual locutions common to both treatises include τεύχεα

²¹ Ducatillon, 1976, 264 and 350–351.

²² See Craik, 1998, 15–16.

'vessels' (*Gland.* 5, 17 with *Loc. Hom.* 1, 9 [6. 276, 292 L.]) The ordering of the seven bodily fluxes exactly corresponds: ears, eyes, nose, throat, belly, back (sacrum), hips (hip-joints). The same details of anatomy and physiology occur with reference to the ear (*Gland.* 13 with *Loc. Hom.* 2 [6. 278 L.]) and the omentum (*Gland.* 5, 16 with *Loc. Hom.* 24 [6. 314 L.]).²³

To this point, we have been dealing with similarities, resonances, echoes in a wide range of rather disparate works: common elements in content and expression suggestive of connections, more or less close, but not indicative of common authorship. We come now to a different and much more significant range of parallels evident in a large group of related texts devoted in a theoretical fashion to issues of obstetrics and gynaecology, and especially to topics in embryology and pregnancy. There are peculiarly pervasive affinities in language and style, as well as striking common elements in tenor and thought, with the treatises *Generation, Nature of the Child* and *Diseases* 4 (*Genit., Nat. Pue.* and *Morb.* 4) on the one hand and also with *Diseases of Girls* (*Virg.*), certain parts of *Diseases of Women* (*Mul.* 1 and 2) and certain parts of other gynaecological texts, especially *Infertile Women* (*Steril.*) on the other. *On Glands* can be so closely aligned in so many ways with these writings that the case for common authorship is very strong indeed. This body of material, comprising some works which have survived complete along with some blocks of material which have survived embedded in a setting where they do not totally cohere, is hereafter referred to as 'the group' and its supposed common author as 'the author'.²⁴ In Galen's view, *Nature of the Child* is to be attributed either to Hippocrates or his 'pupil' Polybos (*de foetuum formatione libellus*, 4. 653 K. and *Hippocratis Epidemiarum II et Galeni in illum Commentarius*, 17A. 445 K.).

That there is a remarkable degree of cross-reference, as well as common linguistic and doctrinal elements, in this group is incontestable. Littré already saw the affinity of *Generation, Nature of the Child* and *Diseases* 4 with *Diseases of Women* and *Infertile Women*. In addition, he noted, through explicit cross-reference, a connection also with *Diseases of Girls*. Littré placed all these works, which he regarded as an entity, and as all by the same author, identified only as non-Hippocratic and pre-Aristotelian,

²³ For further examples, see Craik, 2002, 285–287.

²⁴ A possible designation is [Hippocrates], a shorthand use of the conventional square brackets inserted in LSJ to indicate spurious attribution: the only thing to be said with some certainty is that this was *not* his name.

in his 'sixième classe'.²⁵ He believed that the gynaecological works had originally comprised a continuum, beginning with the programmatic opening of *Diseases of Girls*, plausibly viewed as an all embracing preface for 'l'ouvrage entier', followed by *Diseases of Women* 1 and 2, then by *Infertile Women*. At the same time Littré was well aware of the problems posed by the many verbatim repetitions and near repetitions or parallel passages to be found throughout the group.²⁶ The three works conventionally entitled *Generation*, *Nature of the Child* and *Diseases* 4 were similarly regarded as continuous and printed as one by Littré. Since then it has been argued that, while *Generation* and *Nature of the Child* cohere, *Diseases* 4 though by the same author is not part of the same work. The traditional titles are somewhat unfortunate. In particular, the use of two separate designations *Generation* and *Nature of the Child* obscures the certainty that *Generation* 1–11 followed by *Nature of the Child* 12–31 is a single work, the consecutive numbering being justified. The conventional numbering *Diseases* 4 32–57 is unhelpful also, as this work does not follow in the same way; and in addition the title is thoroughly misleading.

The interconnections first noted by Littré were explored in the influential work of Grensemann, who isolated three separate strata in the gynaecological treatises and argued, using the term 'Autor C', that our group belongs with the latest.²⁷ In a detailed analytical study of *Generation*, *Nature of the Child* and *Diseases* 4, Regenbogen demonstrated the pervasive character of their affinities in writing style, scientific methodology and medical doctrine. The criteria for common authorship are summed up in terms applicable almost equally to *On Glands*: 'einmal durch die ... selbst ausdrücklich enthaltenen Hinweise, zweitens durch die allen gemeinsame Sprache, mit ihrer bewussten Kunst der rhetorisch-poetisch tingierten Wortwahl und Figurenbildung, drittens durch die durchgehenden Aufbau und Gliederungsmittel, deren stereotype Formeln den bewussten und gewollten Zusammenhang verbürgen, schliesslich durch die Einheit der allem zugrunde liegenden Doktrin'.²⁸

The relative chronology of the works cannot be established on doctrinal grounds. However, from the tenses used the order of presentation can be plausibly deduced as: first, a work or works on the physiology

²⁵ See Littré 1, 375–379; 7, 462 and 542, n. 2; 8, 6.

²⁶ See Littré 8, 532–534.

²⁷ Grensemann, 1975, 1982; see also Joly, 1970/2003, 24–27; Lonie, 1981, 44–45; Müller, 1998; Giorgianni, 2006, 6–30.

²⁸ Regenbogen, 1950, repr. 1961.

of human reproduction, heredity and embryology (surviving as *Generation-Nature of the Child*); second, a work or works on topics in obstetrics and gynaecology (partially surviving, embedded in the HC, and including the fragmentary *Diseases of Girls*); third, *Diseases 4*. Thus we have, in the perfect tense, the explicit assertions εἴρηται μοι ἐν τῇ φύσει τοῦ παιδίου τοῦ ἐν τόκῳ (*Mul.* 1. 1 [8. 10 L.]), εἴρηται μοι ἐν τῇ γενέσει τοῦ παιδίου τῇ ἐν τόκῳ (*Mul.* 1. 44 [8. 102 L.]) and εἴρηται μοι ἐν τῇ φύσει τοῦ παιδίου τοῦ ἐν τόκῳ (*Mul.* 1. 73 [8. 156 L.]). As the content is indeed repeated, relating to the effect of childbirth on the body and the onset of lactation (*Nat. Pue.* 30 and 21 [7. 530, 532 L. and 7. 512 L.]), it is virtually certain that the references are to the work we know with a title of this type and that *Diseases of Women 1* is, at least in part, by the same author as and written later than *Generation-Nature of the Child*.

Further, the author of these works expresses in the future tense his intention to write on diseases of women: εἰρήσεται μοι ἐν τῇσι γυναικείησι νόσοις (*Genit.* 4 [7. 476 L.]) and ἀλλὰ τί δεῖ λέγειν αὐτὰ ἐνθάδε· εἰρήσεται γὰρ ἐν τοῖσι γυναικείοις νοσήμασιν· ἀλλ' ὅθεν ἀπέλιπον περᾶνέω τὸν λόγον (*Nat. Pue.* 15 [7. 496 L.]). The topics deferred are amenorrhea and complications in pregnancy supposedly precipitated by the course of menstrual blood to the womb; both are discussed in various passages of *Diseases of Women* (for example, *Mul.* 1. 61 [8. 122–126 L.]). And in *Diseases 4*, the author claims, in the perfect tense, to have already described dropsy in women, ἀποπέφανται δέ μοι ἐν τοῖσι γυναικείοις νοσήμασιν (*Morb.* 4. 57 [7. 614 L.]); again, the topic is indeed covered in the corpus as it survives. In *Diseases of Women*, reference seems to be made to *Diseases of Girls*: ὥσπερ μοι εἴρηται ἐν τῇσι παρθενίησι νόσοις (*Mul.* 1. 2 [8. 22 L.]) and πάσχοι ἂν ἡ γύνῃ ὁκοῖα εἴρηται ἀμφὶ τῆς παρθένου (*Mul.* 1. 41 [8. 98 L.]).

However, some caution is always needed in identification. There are cases where an author refers to his own previous work without giving a title, including a passage in *Generation* where a prior discussion of the four humours is claimed, δεδήλωται δέ μοι καὶ περὶ τούτων (*Genit.* 3 [7. 474 L.])—not presumably a reference to the humoral theory of the apparently later *Diseases 4* (*Morb.* 4. 49 [7. 580 L.]; cf. 32 [7. 542 L.] and 39 [7. 558 L.]), but perhaps a genuine reference to another work, or an earlier draft.²⁹ And, of course, different works, oral or written, with the same or similar titles might have been in circulation. Such passages

²⁹ Fredrich, 1899, argued for the possible priority of *Morb.* 4, but this view has not been widely accepted.

illustrate a complex process of composition resulting from a complex evolution of ideas, and demonstrate the problematical intertextual relationships between different works, where questions of priority and influence arise. There is a fundamental methodological problem in attempting to gauge the degree to which an author's own ideas may develop and change, or the degree to which he may present apparently different ideas through choosing a different emphasis for a different topic or different intended audience.³⁰ The difficulty is compounded by the apparent readiness of authors to adopt, with or without adaptation, material from their predecessors. This is evident in *Nature of Woman* (*Nat. Mul.*), almost entirely derivative.

Whereas the narrative flow in the gynaecological texts generally is much interrupted by repetitions and digressions such as lists of recipes (suggestive of different hands and a process of accretion) *Generation-Nature of the Child* and, to a lesser extent, the more diffusely argued work *Diseases 4* resemble *On Glands* in having a clear and reasoned presentation (suggestive of a single author). As noted above (Introduction I B), one of the most immediately striking stylistic features of *On Glands* is the author's tendency to indicate, in a somewhat long-winded way, transitional points in his exposition (see on 4.1, 7.1, 8, 14.2). The works *Generation-Nature of the Child* and *Diseases 4* share this ostentatiously didactic arrangement of topics, which is even more arresting in *On Glands* because of its shorter compass and more restricted subject matter. So in these related works, the writer constantly tells us in the perfect tense that he has dealt with a particular topic, and in the future tense that he is about to return to his main theme. Thus, for instance, we see ταῦτα δέ μοι ἐς τοῦτο εἰρέεται· ἀναβήσομαι δ' αὖθις ὁπίσω ἐς τὸν λόγον ὃν ἔλεγον (*Genit.* 11 [7.484 L.]) and ταῦτα δέ μοι ἐς τοῦτο εἴρηται· ἐλεύσομαι δὲ αὖθις ἐς τὸ ἐπιλείπες τοῦ λόγου (*Nat. Pue.* 20 [7.510 L.]). This persistent schematic emphasis, occurring at the beginning and end of almost every section, can seem tiresomely pedantic; although to Lonie it is merely the 'style of the lecturer', Joly finds in such recurrent formulaic statements as ταῦτα δέ μοι εἴρηται 'une manière monotone et passablement agaçante' and regards the constant recapping as indicative of 'une certaine gaucherie archaïque'.³¹

³⁰ See Dean-Jones, 1994, 59–60, for a more optimistic view of the consistency to be found in ancient writers on topics in gynaecology.

³¹ Lonie, 1981, 119; Joly, 1970/2003, 98, n. 3.

In the parts of *Diseases of Women* plausibly attributed to our author on other grounds, this stylistic trait is evident. Thus the phrase κατὰ τὸν ἔμ-προσθεν λόγον is used no fewer than three times in a single short section (*Mul.* 2. 133 [8. 294, 296, 302 L.]). There are many examples throughout *Infertile Women* including an early indication that a discussion of illnesses has gone before (πρότερον εἴρηται), and that a discussion of reasons for failure to conceive is now projected (νῦν δὲ ἀποφανέω) (*Steril.* 213 [8. 408 L.]). The verb ἀποφαίνειν ‘demonstrate’ has a somewhat assertive didactic tone; it is much used in the *Generation-Nature of the Child* and *Diseases* 4 (2, 29, 32, 33, 35, 38, 41, 45, 46, 57 [7. 474, 530, 542, 544, 556, 568, 572, 612 L.], several times in some of these sections). The verbs δηλόω ‘clarify’ (*Morb.* 4. 38 [7. 556 L.]) and ἐρμηνεύω ‘interpret’ (*Morb.* 4. 38, 39 [7. 556, 558]) are similarly lofty in tone, as are many other claims, such as δῆλος οὖν ὁ ἐκλογισμὸς ἐστὶ ‘the conclusion is clear’ (*Nat. Pue.* 12 [7. 486 L.]). The author’s persona obtrudes more in these other works than in *On Glands*, where he is relatively self-effacing: the personal pronoun μοι appears only twice (10, 14.2) and verbs in the first person only three times (7.1 *ter*), always in this asseverative context.

A related feature is the repeated use of such corroborative expressions as σημεῖον ‘sign’ and μαρτύριον ‘evidence’ to guarantee the authenticity of his account, and there is similar regular usage of ἀνάγκη ‘necessity’ or the cognate verb ‘necessitate’ to hammer home a point, reinforce an argument or bolster up a conclusion (see on 4.1, 16.2, 17 and cf. *Morb.* 4. 54 [7. 596, 598 L.]). Such adverbs as οὕτως or ὥδε ‘thus’ and such connectives as ‘for’, ‘therefore’ abound also. Joly, always rather critical of the author’s scientific method, complains in one case that an example presented summarily as decisive merely encapsulates an ingrained prejudice; and in another that, although the author’s sincerity is not in doubt, the quality of his observation requires caution.³² Lonie too remarks on the author’s selective or slanted use of evidence: he chooses to present observations which tend to confirm his theories; although always clear and intelligible he is not always cogent, using methods which are inadequate (or even dishonest).³³ The tendency to validate a hypothesis or theory by observed ‘facts’ is apparent at several points in *On Glands*: alleged association of glands and hair (4); supposed consequences of breast removal (17).

³² Joly, 1970/2003, 53, n. 2; 72, n. 3; cf. also 54, n. 2.

³³ Lonie, 1977 comments especially on the account of lochial discharge (*Nat. Pue.* 18 [7. 500 L.]) and on the presentation of critical days (*Morb.* 4. 48 [7. 578 L.]).

To some extent, similarities in expression result from a common authorial expository purpose and a common physiological theme. Many Hippocratic authors use the first person and claim to present their own views, but the expression tends to vary. Thus, the author of *The Sacred Disease* frequently expresses his views as ‘opinions’ (ἔμοιγε δοκεῖ, ἐγὼ δὲ δοκέω, οὐ μέντοι ἔγωγε ἀξιῶ) and even professes ignorance at one point (οὐ δὲ οἶδα ἔγωγε)—though he is famously censorious of others as ignorant (οὐδὲν ἐπιστάμενοι) charlatans (*Morb. Sacr.* 1 [6. 352 L.], 17 [6. 392 L.] etc.). An expository tone is marked in *On Regimen* and in *Nature of Man* also.³⁴ Thus in *Nature of Man* there are such locutions as ἐγὼ δὲ φημι, ἀξιῶ δὲ ἔγωγε and ἐγὼ μὲν γὰρ ἀποδείξω (*Nat. Hom.* 2 [6. 34, 36 L.]). Like the author of *Affections*, this author refers to his own other writings: πέρφρασται καὶ ἐτέρωθι (*Nat. Hom.* 9 [6. 54 L.]); similarly ἐτέρωθί μοι γέγραπται (*Aff.* 18 [6. 228 L.]). But, despite these superficial similarities, differences in overall expression and doctrinal presentation are evident.

The author of *On Glands* uses, in common with the author of *Articulations* (single instance), the phrase οὐ βούλομαι ἀποπλανᾶν τὸν λόγον (see on 7) and, in common with the author of the group (multiple examples), the expressions ὥς καὶ ἔμπροσθεν εἴρηται (see on 4.1), νῦν δὲ ἀναβήσομαι τῷ λόγῳ καὶ ἐρέω (see on 7.1), καὶ ταῦτα μὲν ἀμφὶ τῶνδε (see on 8), ταῦτά μοι ... εἴρηται (see on 14). There are in addition many idiosyncratic features of language, too many to be regarded as random coincidence. The use of μελεδαίνειν ‘tend’ (see on 14) indicates affinities with the gynaecological texts, where it is peculiarly favoured. Among many instances of shared preferences in vocabulary are the strange verb ἀποβράσσεσθαι (see on 4), the idiosyncratic repeated ἐπαυρίσκομαι with identical nuance (see on 9), the colourful ἀίσειν and compounds with similar reference (see on 14.2), the use of πῦρ in the sense ‘fever’ (see on 2.1) and ὀδάξομαι of pain (see on 12); though suggestive these alone would be inconclusive (as is argued above for similarities with *Articulations*). The case rests on a multiplicity of considerations, not confined to vocabulary. The use throughout the group of κάρτα rather than the more common synonymous σφόδρα as an intensifying adverb is notable. A similar instance is a preference for the conjunction ἐπὶν rather than ὅταν ‘when’. Grensemann regards κάρτα as a significant feature of his ‘Schicht C’ and lists examples of this usage.³⁵ It is cogently

³⁴ On *Nat. Hom.*, see already Fredrich, 1899, 31.

³⁵ Grensemann, 1975, 92.

argued by Joly, expressing some scepticism about the validity of the distinctions made between layers A and C, that Grensemann's criteria are not all equally significant; Joly does however allow that exclusive or preponderant *κάρτα* is a significant chronological determinant.³⁶ Indeed, a thorough reconsideration of the entire question, preferably on a statistical basis, is a desideratum.

It is surely telling that, as in *On Glands*, unusual alpha privative forms are strongly favoured throughout the group. A few examples are: *ἀναρθρος* (*Nat. Pue.* 18 [7. 504 L.]); *ἀγάλακτος* (*Nat. Pue.* 30 [7. 536 L.]); *ἀνεπιτήδειος* (*Morb.* 4. 50 and 51 [7. 582 and 584 L.]). One such coinage is *ἀκίνδυνος* 'danger-free', a curious formation found in only some manuscripts of a passage in *Nature of the Child*, but guaranteed by a parallel passage in *Diseases of Women* (*Nat. Pue.* 18 [7. 504 L.] ~ *Mul.* 1. 72 [8. 152 L.]).³⁷ Another instance is *ἀνάριθμος* in the weighty statement that the earth contains *δυνάμεις παντοίας καὶ ἀναρίθμους* 'unnumbered powers of all kinds', made arresting by the language, perhaps in this case a poetic affectation³⁸ (*Morb.* 4. 34 [7. 544 L.]). Two features more prominent in gynaecological writing than in other Hippocratic works are the use of the dual number and use of diminutives. These occur both in *On Glands* (see Introduction I B) and in the group. Instances of the dual are *τοῖν μαζοῖν* (*Nat. Pue.* 21 [7. 514 L.]) and *τῷ χειρὶ* (*Nat. Pue.* 28 [7. 528 L.]). Instances of diminutives are *ἀρτίσκος* 'little loaf' (*Steril.* 216 [8. 416 L.]) and *σκυλάκια* 'little puppies' (*Steril.* 217 [8. 420 L.]).³⁹ In the group, especially in *Diseases* 4, there is the same tendency as in *On Glands* to a rather formal, somewhat otiose, deployment of 'more or less' expressions (e.g. *μᾶλλον ... ἥσσον* *Genit.* 4 [7. 476 L.]; *πλέονα καὶ ἐλάσσονα* *Morb.* 4. 33 [7. 544 L.]; *ἢ πλεον ἢ ἐλάσσον* *Morb.* 4. 35 [7. 550 L.]). And there is similar, rather mechanical, use of the rhetorical triadic series (e.g. *Nat. Pue.* 1 [7. 470 L.]).

But by far the most striking stylistic features are two grammatical and syntactical tics. First, where a sequence of conditional clauses is found, there is a shared predilection for an inconstant and unusual syntactic construction: after a first protasis expressed by *εἰ* and the optative, a second parallel protasis is expressed by *ἥν* with the subjunctive (see on

³⁶ Joly, 1977, especially at 141.

³⁷ See Joly 1970/2003, 61, n. 1.

³⁸ Cf. A. PV 90 *κυμάτων ἀνήριθμον γέλασμα*.

³⁹ It may be that this use of diminutives, which is especially common in recipes, is an aspect of 'women's language', a peculiar unrecognised type of colloquialism.

12.2). Second, the regular voice of the verb πονέειν shifts in a peculiar idiom: the verb is used transitively, in the sense ‘give trouble’, as well as intransitively, in the sense ‘have trouble’; further, it is used in both passive and active forms so that the middle form πονέεσθαι rather than the active form πονέειν can have the sense ‘suffer’ (see on 1 and 2 and cf. *Nat. Pue.* 18.2 [7. 500 L.]). On these features, which have been noted and discussed by previous commentators,⁴⁰ see also Introduction I B.

Negative points to be noted are that practice in *Glands* differs from the group in that bodily moisture is never referred to as ἰκμάς (for the different terms used of ‘moisture’ in the work, see Introduction I B) and that μήτηρ singular, not μήτραι plural is used for ‘womb’ (16, 17). However, in this latter respect, practice in the group is not invariable: singular and plural forms occur together (sometimes in rapid succession) throughout *Infertile Women*. An occurrence of the singular in *Nature of the Child* is emended away by some, though not all, modern editors, as perhaps in other cases by scribes before them (*Nat. Pue.* 13 [7. 490 L.]).⁴¹ As to ἰκμάς, Erotian (I 17) defines the derived adjective simply as ἰκμαλέα· τὰ δίνυγχα καὶ ἰκανὴν ἔχοντα ἰκμάδα ‘things which are wet and have enough moisture’; but in practice ἰκμάς seems to be used specifically of moisture or fluid where the ‘notion of nutritional substance’ is involved.⁴² Thus, it is moisture in the body which provides nutriment for the growth of hair (*Nat. Pue.* 20 [7. 506 L.]); moisture in the earth which provides nutriment for plant growth and fructification (*Nat. Pue.* 22–27 [7. 514–528 L.]); and moisture as the substance extracted from food which provides strength (*Morb.* 4. 43 [7. 566 L.]). In certain contexts, the word ἰκμάς seems equivalent to the word τροφή ‘food’ (*Aff.* 51, 52 [6. 260, 262 L.]; cf. Arist. *PA* 674a). In *Diseases* 4, ἰκμάς and ὑγρόν are at times used interchangeably, but at times differentiated. In one context, the phrase τῷ ἄλλῳ ὑγρῷ is followed by τῇ ἄλλῃ ἰκμάδι (*Morb.* 4. 35 and 36 [7. 550 and 552 L.]), but in another there is a distinction between one fluid, ὑγρόν, causing pain and another, ἰκμάς, displacing it (*Morb.* 4. 46 [7. 574 L.]). The absence of the word ἰκμάς from *On Glands* is not readily explicable. It might be suggested that the moisture so prominent in *On Glands* is not all, or not

⁴⁰ See Diels, 1918; Lonie, 1981, 49 and 304, following Regenbogen, 1950, repr. 1961; also Giorganni, 2006, 248–249 on Grensemann’s ‘Autor C’.

⁴¹ The singular is retained, with argument against ‘rigidité linguistique’, by Joly, 1970 / 2003, 55, n. 2; but it is emended by Giorganni, 2006. Cf. also Joly, 1977, an excellent study of such features and their possible statistical significance.

⁴² Lonie, 1981, 61; see also 269–270.

primarily, moisture of the kind denoted by this word, but this is not entirely convincing. A more plausible explanation may lie in the tendency of an author to favour particular terminology at different times in his life, or in the power of association with a different group to bring about a change in practice and usage. (Etymologically, ἰκμᾶς refers to something filtered out or exuded; it is in a sense a jargon word which might have acquired currency in scientific writing through being adopted by some influential figure.)

That the author of *On Glands* had poetic pretensions is evident (see on 12). The same mindset is apparent in a passage of *Diseases* 4, describing the restricted geographical flourishing of the medicinal plant silphium, in a way curiously reminiscent of lines in Sophocles *Oedipus Coloneus*, describing the spontaneous generation of the olive on the Athenian Acropolis.⁴³ The Sophoclean passage runs ἔστιν δ' οἶον ἐγὼ γὰρ Ἀσίας οὐκ ἐπακούω / οὐδ' ἐν τῇ μεγάλῃ Δωρίδι νάσῃ Πέλοπος / πώποτε βλαστὸν / φύτευμ' ἀχείρωτον αὐτοποιόν (S. OC 694–698, ed. Lloyd-Jones and Wilson). The passage in *Diseases* 4 is as follows: ἀλλ' ὅμως οὐ δυνατόν, πολλῶν ἤδη πειρασμένων, οὔτε ἐν Ἰωνίῃ οὔτε ἐν Πελοποννήσῃ σίλφιον φῦναι. ἐν δὲ τῇ Λιβύῃ αὐτόματον φύεται (*Morb.* 4. 34 [7. 546 L.]). The salient similarities are these: firstly, denial of the plant's appearance in the same two regions—that is, both in the adjacent near east, expressed as 'Asia' by Sophocles and as 'Ionia' by the Hippocratic author, and in the Peloponnese, expressed as 'the great Dorian island of Pelops' by Sophocles and simply as 'the Peloponnese' by the Hippocratic author; secondly, the use of matching epithets, αὐτοποιόν and αὐτόματον—this is the more striking as the adjective 'growing by itself' is appropriate to the supposed miraculous appearance of the olive in the Erechtheum, but not similarly appropriate to silphium. If there really is imitation, and if the direction of imitation is from verse to prose author, it follows that the *Diseases* 4 was written after 401 BC, when *Oedipus Coloneus* was first produced (posthumously) at Athens. (It is just possible that there is an allusion, which would be picked up by the cognoscenti, to the olive plant in the sanctuary of Morios Zeus—site of Plato's Academy after c. 385 BC—said to have been the second to spring up of itself (Paus. 1. 30. 2).)

As to content, the fundamental concepts pervasive in *On Glands* appear throughout these other works also, expressed in similar terms; most

⁴³ The similarity is noted by Lonie, 1981, *ad loc.*

notably the notion that parts of the body ‘draw’ moisture from one another (as *Morb.* 4. 35 [7. 548 L.], similar to *Gland.* 4; *Nat. Pue.* 15 [7. 494 L.], of the embryo) and that ‘separation’ leads to change (see on 11). It is significant that physiological ideas merely adumbrated in *On Glands* are given more extended treatment in other works of the author: the theory that the male and the female body differ in texture (see on 1 and 16); the theory that lactation has a digestive origin (see on 16.1); the theory that hair is connected with moisture (see on 4, 5, 10); the theory that plant and human growth are analogous (see on 5); theories that fluid motion in the body is governed by pressure and by attraction between its parts, and especially that moisture is ‘drawn’ to empty space (see on 10); theories of bodily balance, reciprocity and equilibrium (see on 3, 9, 14). These similarities are not all equally weighty, as determinants of common authorship or even common affiliation. For instance, the notion that formation of hair is associated with presence of moisture occurs not only in *Nature of the Child* (*Nat. Pue.* 20 [7. 506 L]) as well as in *On Glands* but in other works as well, both Hippocratic and non-Hippocratic (see on 4).

Several instances, however, are peculiarly colourful and those where allusive reference is made to a fuller account elsewhere can be regarded as particularly significant. As the belief that women are more ‘moist’ than men is generally prevalent and underlies much theorizing about menstruation, pregnancy and birth, its occurrence in different works is unsurprising. However, it is notable that the brief assertion in *On Glands* (16) that the male body, not retaining moisture, is dense *like cloth* and the female, retaining moisture, is loose *like wool* is clarified by an experiment described at the beginning of *Diseases of Women* 1 (*Mul.* 1. 1 [8. 12, 14 L.]): when cloth and wool of similar weight are soaked in water for a period of forty-eight hours (or rather for two days and two nights) their relative denseness or looseness is seen to be significant in determining the amount of water each can absorb. The emphasis accorded the statement in *Diseases of Women* 1 suggests that the author attached much importance to this experimental corroboration of the existence of differences between the sexes in body texture and may have reiterated it frequently: ὅς μοι καὶ πρὶν εἴρηται φημὶ γυναῖκα ἀραιοσαρκότερην καὶ ἀπαλωτέρην (*Mul.* 1.1 [8. 12 L.]). A refinement of the theory appears in *Nature of the Child*: different women may be relatively dense or relatively loose in flesh (*Nat. Pue.* 21 [7. 512 L.]). Lactation is explained briefly but quite clearly in the same section, 16: food is changed into milk and goes from womb to breasts through pressure of the womb on the stomach.

More extended accounts of this process can be seen in both *Nature of the Child* and *Diseases of Women* (*Nat. Pue.* 21 [7. 512 L.]; *Mul.* 1. 73 [8. 152, 154 L.]).⁴⁴ Botanical similes and metaphors linking people and plants, as at *On Glands* 5, are important throughout these works; it is explicitly asserted that plant and human growth are the same (*Nat. Pue.* 27 [7. 528 L.]; see also *Nat. Pue.* 17 and 22–24 [7. 498 and 514 L.] and *Morb.* 4. 34 [7. 544, 546 L.]) and in a lengthy excursus the analogy is developed (see on 5.2).⁴⁵ The observation in *On Glands* (5.1) that too much moisture in the earth will stifle seed growth is expressed in identical language to an account in *Diseases of Women* of foetal distress resulting in miscarriage (*Mul.* 1. 60, 78 [8. 120, 186 L.]).

There is a network of parallel passages, where corresponding ideas are developed in corresponding language. Throughout all these works, much importance is attached to fluids in the body. Moist matter is ‘drawn’ to empty space. As in *On Glands*, the parts of the body ‘receive’ and ‘discharge’ fluids in a reciprocal relationship of exchange such that one part ‘benefits’ from another, thus maintaining a state of equilibrium and balance. The theory of reciprocal nutrition between different parts of the body and the theory of bodily drainage based on reciprocity between belly and the rest of the body is expressed in terms of distribution and mutual benefit in both *Diseases* 4 and *Diseases of Women* (*Morb.* 4. 39 and 41 [7. 558 and 562 L.]; *Mul.* 1. 61 [8. 122 L.]). In the former, the activity imputed to the four *πηγαί* ‘sources’ is very similar to that of glands in *On Glands*; in the latter, the activity of the spleen, which is described as fine, spongy and on palpation soft like down is similarly envisaged (cf. on 1 and see also on 9).

It is even more significant that *On Glands* contains several passages, obscure in isolated context, but clarified by other works in the group, and especially by the lengthy exposition in *Diseases* 4 of theories of physiological function and pathological change (see on 7, 11, 14). Thus the brief and cryptic statement that the body ‘sends all kinds of vapours up to the head’ (see on 7.2) is made clear by the extended description of the presumed pathology, based on the vaporizing effect of heat, which forced fluids in the body to ascend to the head (*Morb.* 4. 51 [7. 584 L.]). The passing reference to moisture in the intestines (see on 9) is clarified

⁴⁴ Lonie, 1981, 206, noting the similarities between *Nat. Pue.* 21 and *Gland.* 16 briefly and without argument dismisses the latter as ‘late and derivative’.

⁴⁵ See Lonie, 1969.

by the account in *Diseases* 4 of the place of moisture in the digestive process (*Morb.* 4. 44 and 49 [7. 566, 568 and 578, 580 L.]). The physiology of 'secretion' noted here briefly (11) is the same as the physiology of secretion and purgation described at length in *Diseases* 4 (*Morb.* 4. 46, 51 [7. 572, 584 L.]). Also, the aetiology and pathology of *eileoi* 'twisters' in *On Glands* is identical to the disease described in related terms in *Diseases* 4 (see on 14.1). Theories of bodily 'tension' expressed by the verb *τείνεσθαι* are similarly envisaged also (see on 15). The two morbid principles implicitly at work in *On Glands* correspond to those explicitly named in *Diseases* 4, *βίη* and *πληθώρα* 'force' and 'excess' (*Morb.* 4. 50 [7. 584 L.]). In *On Glands*, more importance is attached to quantity than to quality of fluids in the body. Reference to fluid which is *δριμύ* 'pungent' may imply a particular humour (see on 7, 12); but there is no such clear differentiation as that seen in *Generation* and *Diseases* 4 (*Genit.* 3 [7. 474 L.] and similarly 11 [7. 484 L.] on four 'forms of the moist'—blood, bile, water and phlegm—all innate and the source of disease; also *Morb.* 4. 35 [7. 548 L.] on phlegm; 36 [7. 550, 552 L.] on bile; 37 [7. 552, 554 L.] on water; 38 [7. 554, 556 L.] on blood).

Although the prime interest in these important related works is theoretical, relating to embryology, there is practical concern too with the process of the healthy development and safe birth of the child, once conceived. In *On Glands* only one topic relating to obstetrics and gynaecology is raised: lactation, the subject of 16–17. Whereas the other known works attributable to our author are concerned primarily with the working of the female body, *On Glands* gives an account of an important aspect of general anatomy and physiology. Two passages in *On Glands* have close resemblances to passages in the extant *Diseases of Girls*, one on hallucinatory experiences and one on delirium and madness; here too the passages in our treatise are clarified by comparison (*Virg.* 1 [8. 466 and 468 L.]; see on 12 and 15); and in the two works vital body parts are similarly defined (see on 17). In addition, there is an allusion to hallucinatory dream experience (in men) at the start of *Generation* (*Genit.* 1 [7. 472 L.]).

Where should we place *On Glands* in the chronology of the author's scientific oeuvre? In content, the extraordinary brevity and allusiveness might be taken as backward reference to an author's earlier work, or as forward reference to ideas not yet fully developed or recorded in written form. In expression, the idiom and argumentation is unmistakably that of the group, yet the extraordinary terseness suggests a different purpose or a different audience. In relation to *Diseases* 4, *On Glands* may be viewed as preliminary jottings of ideas later amplified, or alternatively

as backward reference to thoughts already more fully expressed; nothing can settle the question definitively. To some extent, the question may be inappropriate, even anachronistic. Both of these works seem to grow from a vast ambient tradition from which the author can adopt and adapt material. The modern assumption that an author will be consistent may well be false; the attempt to standardize (for instance by changing ὕδωρ to ὕδρωψ or equating the two concepts, so that *Nature of the Child* is closer to *Diseases* 4) may well be misguided. The final chapters (16–17) slightly spoil the coherent story already presented of glandular function: the theory of the place of the breasts goes too far. These chapters are detachable. But whether they are an add-on or a starting-point is impossible to say.

In some respects, the ideas seen in *On Glands* suggest adoption and partial adaptation of ideas expressed in *Places of Man*. This applies especially to an undeveloped humoral theory, based on phlegm-moisture (see on 7) and to an underlying theory of seven fluxes, maintained though not entirely adapted to the theory of glands (see Introduction I A). It may be conjectured (and the occasional Doric feature reinforces this possibility) that the writer's earliest scientific influence was west Greek in character, and that this was overlaid by wider experience of medical and scientific thought originating in other regions (see also Introduction III A). The doctor of *On Glands*, like the doctor of *Articulations* and *Fractures*, is confident enough to express reservations about medical effectiveness (see on 12.2, 14). There is no doubt that he sees himself as a pioneer. Some of the key terminology in his work is his own invention; he explicitly tells us twice that he has 'named' the humoral sources (*Morb.* 4. 34 and 39 [7. 548 and 556]).

Many ideas seen in these works of the group can be found presented in a slightly different light, with different emphasis or different expression, in the four books of *Regimen*. Littré, on the basis of similarities between certain passages, especially where an explanation is given of diminution and increase in bodily moisture, even suggested that *Regimen* 3 might be the work of the same author as *Diseases* 4 (*Vict.* 3, esp. 70–84 [6. 606–634 L.] ~ *Morb.* 4. 45 [7. 568 L.]).⁴⁶ Theories of generation, including the theory of male-female differentiation and the theory of how twins are conceived are put forward (anticipated *Vict.* 1. 9, developed 1. 27–31); the nature of abnormal mental states, including hallucination and

⁴⁶ Littré 7, 569.

irrational fears, is explored (*Vict.* 1. 35 [6. 512–522 L.]). There they have somewhat more sophisticated expression and more developed form. And the language of *Regimen* is completely different, as is its general (philosophical) tenor.

Although a degree of specialization is apparent in Hippocratic works, it seems too that many medical writers produced, or projected, a large output of multifarious works. Thus, our author claims to have written also on chest complaints, such as consumption and pneumonia (*Mul.* 1. 2 [8. 18 L.]). Interest in consumptive illness is evident in *On Glands* also (see on 14). Study of his statements indicates that he recognized a degree of overlap with some conscious rehashing and even some self criticism, for example the statement *κάλλιον δέ μοι περὶ τούτου δεδήλωται ἐν τῇ περιπλευμονίῃ* ‘this topic has been better expounded by me in my work on pneumonia’ (*Morb.* 4. 56 [7. 606 L.]). The author of *Articulations* (an orthopaedic surgeon) was similarly prolific. Among the topics he declared he had treated, or would treat, are—in addition to glands, already discussed—principles of massage; lung diseases; intercommunication of the vessels (*phlebes* and *arteriai*) and of the spinal fluid; the various ways in which all parts of the body interact; the dangers of surgical intervention (*Artic.* 9, 40, 41, 45, 57 [4. 102, 174, 182, 190, 246 L.]). The author of *Affections* states his intention to write on various other subjects: diseases of the eye; diseases involving suppuration; *phthisis* and gynaecology (*Aff.* 5, 33 [6. 214, 244 L.]). Gynaecology and chest disease are the two central topics of Hippocratic medicine, with most space devoted to them; another important topic is that of orthopaedics. There is independent evidence for the place of these activities in early Greek medicine. Herodotos tells of two signal successes achieved by Demokedes, a celebrated Greek doctor at the Persian court; even if the stories are apocryphal, they were evidently plausible as narratives of Greek medicine from around 500 BC (*Hdt.* 3. 129–131). Demokedes cured both King Dareios, who had seriously dislocated his ankle in a hunting accident (*ὁ γὰρ οἱ ἀστρογάλος ἐξεχώρησε ἐκ τῶν ἄρθρων*) and Queen Atossa, who suffered from a breast abscess (*φῦμα*).

It is always tempting to speculate on common authorship of extant works; but in view of the large number of unknown doctors, the huge number of lost works, and the evident overlap of interests, this is rarely fruitful. *On Glands* is a rare case, in that it can be assigned to a grouping; though paradoxically to an unexpected, and unexpectedly early, one. It may plausibly be dated to the early decades of the fourth century. An important implication is that there was considerable awareness of

glandular anatomy, physiology and pathology among Hippocratic doctors, especially among those who specialized in the theory and practice of obstetrics and gynaecology.

III. *Place in Scientific and Medical History*

A. *Ancient*

The Hippocratic work *On Glands* has an important place in medical history. As will be seen in the next section, the knowledge displayed, and in all probability the means by which it was acquired, foreshadow the science of the seventeenth century. Certainly, no comparable specialist study devoted to the nature, function and pathology of the lymphatic system has survived from antiquity. This does not mean, of course, that knowledge was completely lacking and the evidence of other Hippocratic texts noted above (Introduction II) suggests otherwise—even for the fifth century BC. There is general agreement among ancient authors on the location of the most important glands in the body. The cervical, axillary and inguinal lymph nodes are readily familiar through simple observation and palpation; trouble there could be most readily observed and diagnosed. From this a rudimentary perception of lymphatic function could have followed. The intestinal lymph vessels could have been known through animal dissection and also through close observation of sacrificial animals; the liver and especially the bile were objects of particular attention in haruspicy. Similarly, the thoracic duct in the lower neck, where the lymphatic system is connected to the venous system, might have been observed in the course of sacrifice.⁴⁷ (In the seventeenth century, Rudbeck reported seeing it in a calf, which was being butchered.)⁴⁸ Glands in animals had a great culinary importance also, as is discussed below. The importance of comparative anatomy will be seen throughout this section. It is evident that ancient writers did not feel it necessary to state explicitly that their deductions about human anatomy were based on study of (other) animals.⁴⁹

⁴⁷ The thoracic duct is the lymphatic vessel most readily identified macroscopically. All other channels are invisible in the tissues since they are very small and delicate, without a well defined wall such as that surrounding a blood vessel.

⁴⁸ See Nielsen, 1942, 306.

⁴⁹ Cf. Craik, 2006, 159.

‘Behind the intellectual constructs [of *Generation* and *Nature of the Child*] there is a considerable history of the thought of the best minds in Greece.’⁵⁰ Even without awareness, or acceptance, of the arguments (see Introduction II above) for identification of the author of *Glands* with the author of *Generation-Nature of the Child* (which has a close focus on the subjects of conception and embryology) and of the related *Diseases* 4 (which gives a more diffuse treatment of various subjects, loosely on topics in physiology including digestion, nutrition and bodily humours), it is evident that the same statement is applicable to our treatise. The author might be viewed as a doctor with a scientific bent (interested in botany and zoology) or as a scientist with medical interests (concerned with human as well as animal function); but any such categorization is anachronistic. In fifth and fourth century terms he belongs among *ιατροτέχναι* the intellectual ‘doctor-scientists’ parodied by Aristophanes in *Clouds* of which the first version was produced in 423 BC (Ar. Nu. 331–334). Ideas relating to bodily balance and equipoise are pervasive in early Greek medicine, but it is notable that Alkmaion gives them a political slant in terms of *ἰσονομία* similar to that put forward by our author in terms of *ἰσότης* (see on 9). The poetic diction and penchant for simile evident in *On Glands* are features endemic in early prose writing; however, these are particularly characteristic of Empedokles, who, like our author, took an interest in dream experience (see especially on 5, 7, 12) and who, like our author, saw analogies between plant in the earth and foetus in the womb (see on 5).

The most pervasive underlying presence is that of Demokritos.⁵¹ Although Demokritos is not generally viewed as a ‘doctor’, it is remarkable that many of his works have titles the same as, or similar to, several which are transmitted in the HC: it seems he wrote on the nature of man or on flesh; on humours; and on dietetics. In addition, tradition records a treatise on fever and chronic cough, suggesting an interest in consumptive illnesses, shared with the author of *On Glands* (DK 68 A 33 = D.L. 9. 46). His view that *φλεγμονή* takes its name from phlegm, not from an association with *φλέγειν* ‘blaze’ is in accord with our author also (see on 7). Speculation on the formation of the body and of its different components was a topic of general interest; but it is notable that Demokritos gives a similar account of the formation of horn to that

⁵⁰ So Lonie, 1981, 48.

⁵¹ Already Wellmann, 1929, suggested that *Generation-Nature of the Child* was by a pupil of Demokritos.

essayed in *On Glands* on the formation of hair (see on 5). In addition, Demokritos wrote on topics in embryology, explaining multiple births in such animals as dogs and pigs, a topic covered in similar terms in *Nature of the Child* (DK 68 A 151 = Ael. NA 12. 16; cf. *Nat. Pue.* 31 [7. 540 L.]). And if the account in the Hippocratic letters that Demokritos cut up many animals, scrutinizing their σπλάγχνα ‘innards’ in order to assess the significance of χολή ‘bile’ is correct, this may have a peculiar relevance to research on glands (*Ep.* 17 [9. 350L.]): observation of the lymph nodes (lacteals) in the gut, through extensive animal dissection in the seventeenth century, was the first step to discovery of other parts of the lymphatic system. More theoretical aspects of Demokritean thought can be glimpsed also. Demokritos gives the earliest known expression of a comparison, appearing in *On Glands* and with a long future in philosophical circles, between elements or flavours such as δοῦνύ (see on 7). And the most celebrated theory of all associated with his name, the ‘atomic theory’ of Demokritos and Leukippos, was based on the concept that matter moved into στενοχωρία ‘empty space’ (see on 17). Demokritos had a fundamental place in the interpenetration between medical and philosophical ideas, probably a two-way process.⁵² There are many echoes of Demokritean language and thought in the group, and a clear collocation at the beginning of *Diseases of Girls* (*Virg.* 1 *init.* [8. 466 L.]); for τὸ ἀμερές cf. DK 68 A 13 = *Simpl. Phys.* 925; use of the verb διακρίνειν ‘separate’ is generally Presocratic and particularly Demokritean (e.g. DK 68 A 135 = *Thphr. de sens.* 59; see on 11).

There are traces also of the ideas of Diogenes of Apollonia, an influential but now shadowy figure. Observation of the effects of heat on fluids, expressed by Diogenes in relation to humidity attracted by the sun, seems to underlie the author’s physiological theory (see on 7.2 and cf. *Ar. Nu.* 231–234). In addition to having parallel interests to our author in generation and embryology, Diogenes may have written specifically on glands: truncated fragments describe the brain as loose in texture and the tongue as fine, soft and spongy (DK 64 A 19 = *Thphr. de sens.* 39; DK 64 A 21 = *Aet.* 4. 6. 13).

At the same time, it is easy to find similarities between the theories propounded by our author and the doctrines of the early medical writers surveyed in *Anonymus Londinensis*. A striking instance is Dexippos of Kos (*Anon. Lond.* XI, especially 8–36). The view of Dexippos that

⁵² See the illuminating study of Perilli, 2007.

bile and phlegm, on becoming more wet, turned into *ichors* and sweats, causing trouble as they became thick and purulent is close to the theory of pathological change in *Glands*: there too the stress is on the proper degree of moisture and terms such as purulence and *ichor* are used (see especially on 7, 8, 12). Both authors regard the action of heat as significant in precipitating disease: the verb *τήκεσθαι* ‘melt’ used by Dexippos is parallel to the process implicit in the despatch of ἀτμούς ‘vapours’ in *Glands* (see on 7; also above on Diogenes of Apollonia). Galen’s references to Dexippos consistently name him with Apollonios as ‘pupils’ of Hippocrates, or Hippocrates as their ‘teacher’; these references are silent on abstract doctrine and relate uniformly to their stringent dietary prescriptions in cases of fever (*de optima secta*, 1. 144 K.; *de venae sectione adversus Erasistratum*, 11. 182 K.; *Hippocratis de acutorum morborum victu liber et Galeni commentarius*, 15. 478, 703, 744 K.).

Menekrates too is similar in certain key respects (Anon. Lond. XIX, especially 20–33): health depends on harmony and, in a political metaphor, ill health results from *stasis* (see on ἰσότης, 9; also above on Alkmaion); excess of phlegm leads to the eruption of pustules; also to various fluxes—flux to hips, lungs, ribs, intestines are specified; peccant matter remaining (ἐμμένειν, see on 7) in the body gives rise to black bile (see on 12). There is good ancient evidence (later and anecdotal, but congruous) that Menekrates, originally from Syracuse in Sicily, went to Macedon to be court doctor to Philip, father of Alexander the Great. Menekrates, who was nicknamed ‘Zeus’, was a colourful international figure, evidently well known to the Athenians: his vanity and bombast are mocked by the comic dramatists Alexis and Ephiippos in the era of ‘Middle’ Comedy, mid fourth century (Athen. 7. 289a–290a). If we place credence in these traditions, Menekrates must have been known to Aristotle, and may have been known to Plato. Aristotle’s father had been court physician to an earlier Macedonian monarch (Amyntas II); Aristotle himself became tutor to the young Alexander late in the decade 350–340; Philip reigned from 359 to 336. In Plato’s *Symposium* (which has a dramatic date 416 BC, a date of narration c. 400 BC, a date of composition perhaps c. 380 BC), the doctor Eryximachos, who is treated with scant respect by Plato, shows familiarity with many Hippocratic ideas, notably those of *Regimen* 1, which has some affinities with *On Glands*.⁵³ Our author, whose style is nothing if not magisterial and pompous, fits the stereotype of the comic doctor,

⁵³ See Craik, 2001.

and belongs with such figures as Menekrates and Eryximachos. Equally, he fits the stereotype of the comic scientist vividly presented in Aristophanes *Clouds* and can be aligned with such figures as Diogenes.

There are many elements reminiscent of the subject matter and thought of *On Glands* in Aristotle's biological writings and there are some close parallels also in the Aristotelian *Problemata*. For example, these topics are covered in similar terms: ducts and vessels (see on 2); the nature of joints (see on 3); the growth of hair (see on 4); the anatomy of the gut (see on 5); an analogy between the body and the earth (see on 5); bodily 'parity' (see on 9); a possible connection between 'madness' and bile (see on 12); differences in texture between the male and the female body (see on 16). Aristotle refers on many occasions to his *Anatomai* books on anatomy or dissections (*HA* 1. 16, 497a; cf. *PA* 3. 5, 668a) and wrote also on *Generation*. His debt to his predecessors, especially Demokritos, in this area has long been recognized.⁵⁴ As to the *Problemata*, these are probably based on a long oral tradition with a poetic tenor; for the most part, the content displays pure intellectual curiosity where exploration of therapeutic issues has no place. There are many later examples of the genre, in which the same or similar questions tend to be repeated.⁵⁵ It is perhaps an anomaly that there is no collection of *Problemata* in the HC as it stands, though there are later collections of *Problemata* attributed to Hippocrates. Although there are traces of the question and answer approach in *Koan Prognoses* and *Prorrhetic* 2, as well as in *Epidemics*, most of these are presented with reference to particular cases, not to general theory. Aristotle was evidently familiar with glands in such animals as cat, dog, pig, sheep and ox: his account of comparative anatomy—including descriptions of tonsils, breasts (udders), genitals, axilla, throat, groin and mesenterion—is couched in terms rather similar to those used in the Hippocratic treatise (*HA* 1. 11–17, 493a–496b). Other animals he is known to have dissected include hare, deer, mouse, hyena, ass, leopard and weasel (*PA* 3. 4, 667a); also seal and ox (*PA* 3. 9, 671b).⁵⁶

The two animal species said to have been utilized by Demokritos, dog and pig, are specifically mentioned in the HC: the dog with reference to its intestinal similarity to humans (*Epid.* 6. 4. 6 [5. 308 L.] = *Oss.* 1 [9. 168 L.]) and the pig with reference to an experiment on the lung, similarity to the

⁵⁴ On Demokritos, see Regenbogen, 1931, repr. 1961; on debt in embryology and gynaecology, see Byl, 1977, 325; on traces of other writers, see Perilli, 2007.

⁵⁵ See Jouanna, 1997; Kapetanaki and Sharples, 2006.

⁵⁶ Among these, the seal has particularly large mesenteric lymph nodes.

human lung being simply taken for granted (*Cord.* 2 [9. 80 L.]). The same assumptions are evident in other passages, both in general statements referring to ‘humans and other creatures’ (*Carn.* 1 [8. 584 L.]), and in more particular comments on resemblances in particular aspects: the brain of all animals (*Morb. Sacr.* 3 [6. 366 L.]); the thighbone of the ox (*Artic.* 8 [4. 94 L.]). Our author compares pregnant women to pregnant cattle (τὰ ἐν γάστρῳ ἔχοντα κτήνεα), with regard to the effects of food on their ‘fattiness’ (*Nat. Pue.* 21 [7. 512 L.]). In *Articulations* too certain parallels with cattle are presented (*Artic.* 8 [4. 98]). It may be conjectured that this author lived in a rural pastoral region (such as Kos or Thessaly?): describing nasal surgery he had once performed he casually mentions adapting a piece of sheep’s lung, which happened to be to hand (*Artic.* 38 [4. 168 L.]). The author of *Regimen* makes the statement, apparently not viewed as otiose, that he will disregard ‘other animals’ and confine his exposition to man (*Vict.* 1. 7 [6. 480 L.]). From lists of animals recommended as foodstuffs, it is evident that cooks would have been familiar with the carcasses of ox, goat, piglet and pig, lamb and sheep, ass, puppy and dog, wild boar, deer, hare, fox and hedgehog—as well as a wide range of birds and fishes (*Vict.* 2. 46 [6. 546 L.]).

According to Galen, considerable anatomical research on the glands started with Herophilos and Eudemos: a viscous fluid like saliva comes ἐξ ἀδένων τέ τινων ἐτέρων ... ἐνταῦθα τεταγμένων ‘from certain other glands located there, that is, in the region of the liver (*de semine*, 4. 646 K.).⁵⁷ Galen tells us that Herophilos expressed the view that the vessels of the mesentery terminated in the lymphatic glands (*de usu partium corporis humani*, 3. 335 K.).⁵⁸ These accounts are somewhat vague, perhaps because of the difficulty in understanding others’ observations or replicating dissections and experiments. In particular, the expression εἰς ἀδενώδη τινὰ σώματα τελευτῶσιν ‘terminate in certain glandular bodies’ is quite imprecise and scarcely illumined by the ensuing reference to τοὺς καλουμένους ἀδένας ‘glands as they are called’.⁵⁹ The passage is closely paralleled by a Galenic account of vessels in the mesentery περραίνουσαι πρὸς ἀδένας τινὰς ἐνταυθοῖ κεκίμενους ‘leading to certain glands situated there’ (*de venarum arteriarumque dissectione*, 2. 785 K.).

⁵⁷ See von Staden, 1989, 208, T 95.

⁵⁸ See von Staden, 1989, 180–181 with 226, T 127.

⁵⁹ In Galen as in our author, the term ‘gland’ is used of disparate parts. Lymph nodes are not strictly glands as they do not secrete fluids: lymph merely passes through on its way from the tissues of the body back to the venous side of the circulation via the thoracic duct.

Galen is well aware that there are many glands in the body. In his view, they are not all equally necessary or useful, but there is a relative need for those which provide saliva, milk or semen and those which furnish φλεγματώδη ὑγρότητα 'phlegm-like moisture' in the mesenterion and elsewhere (*de methodo medendi*, 10. 982–983 K.). Here too there is hesitation over detail and definition: some glands may be regarded rather as ἀδενώδη σώματα 'glandular bodies', these being more fine and more spongy than other glands; this somewhat strange phrase is recurrent (cf. *de usu partium corporis humani*, 4. 189 K.). Galen's lack of precision can be accounted for by the complexity of the subject, or perhaps simply because anatomical detail is not here the main thrust of his account. In the Galenic *Definitions* (*Definitiones medicae*, 19. 443 K.), ἀδὴν 'gland' is given a rudimentary description as συστροφὴ τις ξηρὰ καὶ σαρκώδης ἢ συστροφὴ σαρκώδης 'a dry and fleshy accumulation or fleshy accumulation'; it may be that for ξηρὰ 'dry' should be read σκληρὰ 'hard' (see on 2).⁶⁰

Galen's most extended account of glands is in the section περὶ ἀδένων 'on glands' in a long account of foodstuffs (*de alimentorum facultatibus*, 6. 673–675 K.). There he implies that, whereas most people know only large glands, such as the tonsils, he is familiar with many small ones; those of the mesentery are specified. After a rather unhelpful general statement on the nature of glands—'as distant from the texture of the tongue as the tongue is from the flesh',⁶¹ he discusses many glands, including breasts (udders), testicles and kidneys: 'some people count the kidneys too among the glands; for they have some gland-like quality' (cf. on 6 and 10).⁶² Galen includes the thymus gland, which is especially large in the neck or breast of young animals. This clearly refers to 'sweetbreads' as they are now called, two distinct white fatty glands taken from calves or lambs, one lying immediately below the throat and the other (rounder in shape and more prized by connoisseurs) lying nearer the heart.⁶³ Galen remarks that all glands in common are sweet and ψαθυρός 'tender' (cf. on 1) to eat.

⁶⁰ See Triller, 1742, 134–137.

⁶¹ This statement is odd, since although the surface of the tongue is characteristic, the internal structure is very similar to other muscles of the body (flesh). But the tongue differs in having more fatty tissue.

⁶² They have fatty packing tissue around the internal structures and a speckled appearance.

⁶³ Simon, 1952 and repr., s.v. In humans, the thymus consists of two lobes which lie at the base of the neck on each side and extend equally into the thoracic cage close to the heart.

The culinary importance of ‘glands’—which we might recognize rather as ‘offal’—is evident from many passages quoted in Athenaios. Stuffed spleen seems to have been particularly prized (Athen. 2. 49f; 3. 96c; 7. 295d; 14. 662); also liver, fried and wrapped in an *epiploon* ‘caul’ (Athen. 3. 106f–107f). Sow’s udder was another glandular delicacy (Plu. *Mor.* 124 f, 997a). In *Regimen* the main Hippocratic account of the relative values and qualities (hot, cold, wet, dry) of different kinds of meat, more attention is paid to different animal species than to different cuts. However, at least one passage in *Epidemics*, prescribing a light diet for an invalid, seems to recommend sweetbreads and testicles. After the regular pulse soups, the invalid is to eat ‘boiled puppy’, then graduate to ἡ βόεια τραχήλια ἢ κωλήνας υείων κρεῶν ἐφθῶν (*Epid.* 7. 62 [5. 428 L.]). Jouanna translates ‘soit du cou de boeuf soit du jambon bouilli’, noting that the detail of the sense is unclear.⁶⁴ Earlier editors thought in terms of pigs’ trotters and indeed a dish, rich in gelatinous matter—though scarcely a delicacy—can be made of these. But in conjunction with τραχήλια—surely here sweetbreads, not scrag end, the meat and gristle usually thrown away as scraps, the sense borne at Ar. V. 968—κωλήνες is more probably part of the genitals, a sense regular of κωλέα = κωλής (LSJ, s.v.). Sweet soft glandular foods are prescribed.

As to the physiology of glands, Galen concurs with the Hippocratic author that their function is to monitor bodily moisture, and remove any surplus. Thus the glands in the face (at eyes and nose) dispose of περιπτώματα ‘residues’ and help to clear the channels from the brain (*de usu partium corporis humani*, 3. 693–696, 745, 792, 811 K.); similarly the glands at the root of the tongue receive ‘residues’ from the brain, in the form of saliva (*de semine* 4. 645–647 K.).⁶⁵ Alongside this very traditional view of peccant matter coursing from the brain and arriving at bodily orifices there is a quite sophisticated awareness of the presence and importance of the pineal gland in the brain, τὴν μὲν οὐσίαν ἀδὴν, τὸ δὲ σχῆμα κώνω μάλιστα παρὰ πλῆσιον ‘in actuality a gland, but in appearance very like a cone’ (hence its name, *konarion*), serving, in conjunction with other glands, as φύλακά τινα καὶ οἶον ταμίαν ‘a sort of custodian and monitor’ in important bodily functions (*ibid.* 674–675). Glands, then, have as their function ὑποδέχεσθαι τὸ περιττόν ‘to accommodate excess’ and δέξασθαι ῥεῦμα ‘to receive flux’ (*de curandi ratione per venae sectionem*, 11. 275 K.). Surplus matter is eliminated from ‘stronger’ parts to ‘weaker’

⁶⁴ See Jouanna, 2000, 232, n. 2.

⁶⁵ The statement refers to the sublingual and submandibular salivary glands.

ones; in this the glands most readily δέχονται τὸ ῥεῦμα ‘receive flux’ (*de methodi medendi*, 10. 880–882 K.). Similarly, a statement in the Hippocratic work *Humours*, that one of the body’s functions is ‘attraction’, is explained by Galen, commenting on the passage, in terms of αἱ σάρκες τε καὶ οἱ ἀδένες ‘flesh and glands’—specifically lung, spleen, brain—which are most ready δέξασθαι τὸ ῥεῦμα ‘to receive flux’ (*Hippocratis de humoribus liber et Galeni in eum commentarii*, 16. 469–470 K.).

As to the pathology of glands, Galen is again at one with the Hippocratic writer. Use of the term βουβών shows continuing double nomenclature for gland (originally, gland in the groin) or swollen gland (*Hippocratis Epidemiarum II liber et Galeni in illum commentarii*, 17 A. 410–411 K.; *ad Glauconem de medendi methodo*, 11. 77 K.). Use of the term βουβῶνας to denote swollen gland shows some adaptation of this double nomenclature (*de methodo medendi* 10. 881 K.). Hard swellings in groin or armpits are described by the Hippocratic term χοιράς ‘scrofula’ (*de tumoribus praeter naturam*, 7. 729 K.; *de methodo medendi* 10. 882, 982 K.). Pollux too is familiar with this term: glands are described as ‘swellings which collect, intermediate between flesh and fat’ located especially at groin, axilla, jaw and mesenterion; περὶ οὗς καὶ αἱ χοιράδες συνίστανται ‘around these scrofula arises’ (Pollux 2. 4. 225).

It is noticeable that even in modern textbooks the term ‘gland’ is often accompanied or replaced by more vague expressions such as ‘glandular tissue’.⁶⁶ Expressions such as ‘gland-like’, ‘glandular’, ‘flesh-like’, ‘fleshy’, ‘sponge-like’, ‘spongy’, ‘fat-like’, ‘fatty’, recurrent in ancient attempts at description, are not without parallels in modern medical literature. Similarly, in the seventeenth century, pioneering descriptions of glands seen in cutting of animals used such terms as ‘fat’ and ‘oily’.⁶⁷ Glands are regularly described as ‘loose-textured’ (μανός and σομφός, Arist. *HA* 1.11, 493a). Galen, like all ancient authors who address the topic of glands, seems to struggle with description, frequently having recourse to statements of likeness rather than absolutes. For example, the area of the armpits has ἀδενώδη τε καὶ ὑμενώδη σώματα, μικρὰ πάνυ (*de venarum arteriarumque dissectione*, 2. 788 K.); cf. ἀδενοειδής (*de usu partium*, 4. 182–183 K.); σαρκοειδής or σαρκώδης (*de usu partium*, 3. 338 K., and *de venae sectione adversus Erasistratum*, 11. 275 K.); ἄραιός, χαῦνος and like διάβροχοι σπόγγοι (*de alimentorum facultatibus*, 6. 673 K.), μανώ-

⁶⁶ However, in modern usage similar expressions are admittedly used of other structures (muscles and muscle tissue, fat and fatty tissue).

⁶⁷ See Rudbeck, 1653, tr. Nielsen, 1942.

τερος φύσει (*de methodo medendi* 10. 880 K.). Pollux defines glands as ὄγκοι ... μεσὸν σαρκὸς καὶ πιμελῆς συνιστάμενοι 'protuberances arising, intermediate between flesh and fat' (Pollux 2. 4. 225). Rufus describes them variously as σαρκώδη καὶ ἀδενοειδή 'flesh-like and gland-like' (Ruf. *Onom.* 64–65, 141 DR), πιμελώδεις καὶ σαρκώδεις 'fat-like and flesh-like' (Ruf. *Anat.* 67, 184 DR) and σάρκες τινὲς ὑποπίμελοι 'sort of fatty flesh' (Ruf. *Onom.* 167, 156 DR). Thus, there is a broad consensus on the general texture and appearance of glands, and in it the adjectives used in the Hippocratic work are recurrent.

Celsus too parallels the Hippocratic account, with a similar stress on symptoms which suggest consumption or tuberculosis (*tabes* with many types including *phthisis*, originating in the head and descending to the lung, causing ulceration, fever and cough, 3. 22. 1–4): he describes the condition *struma*: swellings, *quasi glandulae* 'gland-like', with accumulation of pus and blood, appearing in neck, armpits, groins, side and (he has heard) also breasts, chronic and hard to treat (5. 28. 7). He is familiar too with *phymata* 'pustules' in jaws and joints, with tonsillitis involving swelling or swelling accompanied by ulceration, and with swollen glands in the neck as a complication following fracture of the skull. Celsus recognizes goitre also: *at in cervice inter cutem et asperam arteriam tumor increscit ... quo modo caro hebes, modo umor aliquis melli aquaeve similis*. 'in the neck between the skin and the windpipe a tumour forms ... and it contains sometimes soft flesh, sometimes a fluid similar to honey or water' (7. 13. 1).

The presence of influences or interrelations from all over the Greek world is pervasive in *On Glands*, as in the other works of the same author. He is familiar not only with early seminal or key texts associated with Hippocrates (see II above), but also with early work of west Greek tradition. He is an important and original thinker, who occupies a pivotal place linking the thought of the Presocratics and the study conducted in Academy and Lyceum. The date of writing may plausibly be placed in the early decades of the fourth century.

B. Modern

Study of glands requires both anatomical knowledge and physiological understanding. The perception in the Hippocratic treatise *On Glands* that distant and apparently disparate parts of the body, which can be described and identified, have an underlying connection and similar function demonstrates a fundamental insight in both anatomical and

physiological terms. The pathological content is similarly impressive in its recognition of systemic disease. (See Introduction I A above.) The stress on ducts as a distinguishing feature is correct. The author's main thesis closely resembles the succinct modern statement (BMD, Endocrine Glands) 'Various diseases arise as the result of defects or excess in the internal secretions of the different glands'. At the same time, the identification of glands, description of glandular tissue and proper appreciation of glandular function depend on advanced techniques of microscopic observation and substance analysis, far beyond ancient imagining. Similarly, the lymph vessels, except those in the intestine, are not easily identified with the naked eye, though some are palpable when enlarged; they may also be seen as red lines on the skin as infection spreads along lymphatic channels towards lymph nodes.

The general purpose of all glands, which vary widely in nature and size, is now understood as being to synthesise and secrete chemical substances, typically enzymes and hormones (though these terms are relatively modern, current only in the last century or so), which are essential for normal function of the body and efficient operation of its complex self-regulating system. Glands are now classified as endocrine (with internal secretions), which are ductless and secrete their products straight into the bloodstream, and exocrine (with external secretions), which discharge their products through ducts. (But endocrine glands too use ducts in the sense that they utilize the blood vessels for transportation.)⁶⁸ Some, such as the pancreas, have a dual function: the pancreas pours digestive secretions through a duct into the intestine as well as delivering an internal secretion (insulin) directly into the blood. The chief endocrine glands, in addition to the pancreas, are: the pituitary; the adrenal (or suprarenal) glands; the ovaries and testicles; the thyroid; the parathyroid glands; the pineal gland. The chief exocrine glands are: the sweat glands in the skin; the salivary glands in the mouth, including the parotid situated just in front of the ear; the breasts (with lymph vessels draining to axillary nodes). An adjunct to this classification is description on the basis of shape, such as simple tubular, coiled tubular, alveolar etc. There is considerable glandular variation in different species, and also according to different ages, from foetal development onwards. For

⁶⁸ The fact that hormones from endocrine glands are secreted directly into the blood stream means that they are carried systemically and can have very rapid effects. Other glands which have ducts secrete only locally and therefore their effects are more restricted (e.g. bile released into the duodenum has an effect only in the duodenum).

example, the spleen in man is mainly vascular; in oxen mainly reticular; in sheep cellular.⁶⁹ The adrenal glands and the thymus are relatively large in the foetus and in youth.

Glands function within a complex lymphatic system. The general purpose of the lymphatic system is to drain surplus fluid from the tissues and to return it to the circulating blood. The delicate lymphatic vessels form a vast system or network in the body. Natural swellings occurring at various points along the lymphatic pathways are known as lymph nodes. These are small bean-shaped bodies, enclosed within dense connective tissue capsules; they respond to infections and other disease processes by enlarging sufficiently to become readily palpable. They are still today loosely characterized as 'glands' or 'glandular'. Among the most important are: adenoids; tonsils; cervical lymph nodes (in the neck); axillary lymph nodes (in the armpit); mesenteric lymph nodes (in the gut); inguinal lymph nodes (in the groin); lymphatics of the mammary gland (in the breast);⁷⁰ sebaceous glands (in the skin); also the liver, pancreas and many scattered cells throughout the intestines and many in the reproductive tracts. Lymph itself is a colourless fluid, somewhat like blood plasma in appearance, except in the intestine where, especially after a recent meal, it is rich in fat and takes on a milky appearance; the lymph vessels there are known as the lacteals, and the fluid they contain is known as chyle. Our author's main criterion in identifying glands is twofold: firstly, they are alike in their appearance and secondly, they are alike in their pathology; the supposed common physiology is a theoretical adjunct.

A long gradual process of discovery, observation and deduction underlies modern knowledge of glands and lymphatic vessels. Major advances, both anatomical and physiological, were made in the seventeenth century. Harvey's great work on the circulation of the blood (1628) had generated much debate. The difference between circulation in the blood vessels (a closed system of veins and arteries containing blood pumped by the heart) and flow in the lymph vessels (a system partially open, containing fluid moved in the main by muscular contraction) is enormous, but early modern discovery and understanding of the two systems followed somewhat parallel lines.

⁶⁹ *Encyclopedia Britannica*, first edition, 1771, vol. 1, 266.

⁷⁰ There are no lymph nodes in the breast, only lymphatic vessels which drain to the axillary nodes; but the breasts can be described as glandular in the sense that they synthesise and deliver milk.

The lacteals were noted first. The progression in antiquity was probably similar: the Hippocratic letters contain a vivid vignette of Demokritean experiments on animals to ascertain the significance of χολή 'bile' (*Ep.* 17 [9. 350L.]; see Introduction III A above). The work of Gaspare Aselli (born Cremona, died Milan; 1581–1625), published posthumously in 1627, described the lacteals as whitish vessels covering the intestine and mesentery of a dog he was dissecting;⁷¹ the lymphatic vessels in the mesentery are most visible after a fatty meal when fat is transported as an emulsion to the liver and is white in colour (chyle). Others tried to replicate his experiments and further discoveries followed: Jean Pecquet (born Dieppe, died Paris; 1622–1674) observed and described the thoracic duct and its orifice in the subclavian vein, a fundamental contribution to understanding the interconnections between lymph drainage and the circulation of the blood. The title given by Pecquet to his work, mentioning blood and chyle together, aptly encapsulates the significance of his discovery.⁷²

Experiments, which may have been close to those which underlie *On Glands*, were conducted by Olof Rudbeck (from Sweden, working in Padua; 1630–1702) and by Thomas Bartholin (from Denmark, working in Leiden, Padua and Basle; 1616–1680).⁷³ Almost simultaneously they discovered the lymph vessels and distinguished these from the lacteals. Rudbeck's approach was primarily anatomical and Bartholin's more physiological in emphasis. These discoveries were based on scrutiny of internal parts of animals and intensive study of comparative anatomy. Bartholin's title shows clearly that he studied human anatomy in conjunction with that of other animals. Rudbeck's own account of his work records experiments on almost four hundred animals of different kinds: dogs, cats, calves, sheep, goats, wolves and foxes. In detailed notes, he keeps a meticulous record of the differences between these specimens and advises others how to use them. The illustrations appended to his work are of a dog's stomach. As noted above, Hippocratic writers were aware of the close resemblance between human and canine intestines, evidently through cutting up bodies; Demokritos studied the reproductive system of dogs and pigs; Aristotle too conducted research on

⁷¹ The first edition printed at Milan in 1627 was reprinted in 1628 at Basle and, by the Hippocratic commentator van der Linden in a variorum volume, in 1645 at Leiden. A modern facsimile edition was produced in Milan in 1972.

⁷² Pecquet, 1651.

⁷³ Bartholin, 1652 and 1653; Rudbeck, 1653.

many animals. It is remarkable that the reverse process now operates: modern veterinary work utilizes known facts about human anatomy to make deductions about dogs, in the absence of available canine specimens.⁷⁴

Conservative medical critics, foremost among them Jean Riolan (of Paris; 1580–1675), argued against the downgrading of Hippocratic and Galenic views and tried to reconcile them with the new discoveries. Riolan disputed Pecquet's findings, just as he had those of Harvey, and engaged in serious debate, conducting and communicating his own counter-experiments.⁷⁵ Riolan advocated careful dissection and scrutiny of human cadavers and wrote with disparagement and irony of the 'canicides' for which Pecquet and others were responsible. A powerful advocate of comparative anatomy was Severinus (Marco Aurelio Severino, of Naples; 1580–1656): in an important work of 1645 he argued cogently for the structural and functional unity of all plant and animal life and gave detailed accounts of the different yet comparable internal organization of many different species of mammals, including dogs, cats, sheep, pigs, hares and hedgehogs.⁷⁶

Severinus suggested, perhaps heretically, that Hippocrates was in certain respects a pupil of Demokritos, whose importance he fully appreciated. Doctors, however, read Hippocratic works primarily with a view to quarrying them for useful practical nuggets. *On Glands*, not being practically useful, is very rarely cited and seems to have been little known, despite its relevance to the current discoveries.⁷⁷ It is, however, included in one short digest, *Hippocrates Contractus*, a pocket manual for physicians.⁷⁸ The interaction between philological doctors and medical theorists is well illustrated by a magnificent variorum collection published by van der Linden (1609–1664), comprising the seminal treatises of Aselli and of Harvey; also the brief but important response of Walaeus to these, and in addition all the works of Spigelius (Adrian van der Spieghel, 1578–1625), the longest being an anatomical study of the human body in ten books.⁷⁹ Van der Linden with his students did much to make the new

⁷⁴ See Siegel, 1977.

⁷⁵ On Riolan, see Mani, 1968.

⁷⁶ Severinus, 1645; see Schmitt and Webster, 1971 and 1972 on the relationship between Severinus and his contemporaries, especially Harvey.

⁷⁷ Work in progress will explore this further.

⁷⁸ Burnet, 1685.

⁷⁹ van der Linden, 1645 (Blaeu, Amsterdam).

science known and understood,⁸⁰ as well as preparing a complete Hippocratic edition, brought out posthumously by his son in 1665.

The essential structure of the lymphatic system had been discovered and many parts of it were studied in detail: the function of the pancreatic duct, the submandibular duct and the parotid duct were among the first to be understood. Advances and refinements continued: Marcello Malpighi (of Bologna, 1628–1694) discovered, in dissection of a frog (this being a cold-blooded animal, and so more tractable for minute study), the network of tiny blood vessels involved in respiration; he was first too to describe the lymph nodes of the spleen. However, the underlying theory continued to be the subject of much speculation well into the eighteenth century. Thus, the celebrated physician Albrecht von Haller (1708–1777) was first to suggest in 1776 that thyroid, thymus and spleen were glands without ducts, pouring special substances into the circulation; while in 1775 Théophile de Bordeu (1722–1776) proposed that all the organs of the body discharged ‘emanations’, necessary and useful to the whole body, into the bloodstream.⁸¹

The distinguished surgeon John Hunter (1728–1793), younger brother of William Hunter, carried out important work on the function and significance of the lymphatic system through vast researches in comparative anatomy and physiology. In the course this research he was involved in bitter disputes with Alexander Monro (1733–1817, the second of the dynasty of three Monros who in successive generations held the chair of anatomy and surgery in Edinburgh) on their relative priority in discovering and understanding the true nature of the lymphatics as a ‘system of absorbent vessels’.⁸² Hunter is said to have dissected over five hundred different species and many thousands of specimens: insects, fish and birds as well as other creatures. He wrote on an enormous range of topics, embracing many aspects of biology—including, in a paper of 1785, the mode of growth of deer’s antlers, a topic addressed by Demokritos (see on 3).

Major advances were made at the end of the nineteenth century in pioneering work by Ernest Starling (1866–1927), who explained movement between capillaries and tissues in terms of hydrostatic and osmotic pressure—the so-called ‘Starling Forces’—and who was first to use the

⁸⁰ The adverse judgment of Sarton, 1953 on van der Linden is contested by Preiser, 1969.

⁸¹ See Welbourn, 1992 and 1993.

⁸² See Eales, 1974.

term ‘hormone’ (in 1905).⁸³ Research continues, much of it intensely competitive as the pharmaceutical industry attempts to exploit the opportunities afforded by the rise of endocrinology and the hope of cures for deficiency diseases through the isolation of new hormones.⁸⁴ Thyroid gland extract and pituitary extract from the posterior lobe of the pituitary body of the sheep as well as ox-gall from bullocks have all been used in earlier attempts at therapy. Another side of this can be seen in extirpation experiments practised not only on animals but on humans also (cf. on 17). It was discovered that when a cock was castrated, its comb would atrophy, that removal of the pancreas in dogs led to permanent diabetes, and that thyroidectomy or adrenalectomy was fatal to small animals. The physiologist and neurologist Charles Édouard Brown-Séquard (1817–1894) followed up animal experiments with some sensational self-experimentation, announcing at the age of seventy-two that he had rejuvenated himself and others through extracts of guineapig and dog testicles. Even in the twentieth century, following on the new field of endocrinology, the theory of homeostasis, a term coined to describe the capacity of all creatures to maintain physiological equilibrium through continuous internal adjustment and self-regulation, and expressed in slightly mystical terms as ‘the wisdom of the body’⁸⁵ is remarkably close to theories of bodily equipoise put forward in *On Glands* (see on 9).

It is salutary to recall the slow speed of progress in this complex field. The functions of many glands remained unknown long after their anatomical structures were understood. For this reason, descriptions set out in the first edition of the *Encyclopaedia Britannica* of 1771 are sometimes cited: the author’s position is in certain respects similar to the position of our Hippocratic writer. For example, the *glandulae renales* or ‘renal glands’ are fully described with the statement that their uses (secretion of adrenaline or, the American term, epinephrine) ‘have not as yet been discovered’.⁸⁶ The function of the thymus gland was completely unknown till 1960. The exact mechanism by which lymph circulates in the body still remains unclear. It seems that the contraction of adjacent skeletal muscles (there being no muscle in the wall of the lymphatics)

⁸³ See Colp, 1952; Henderson, 2005; also Starling, 1892 and many reprints.

⁸⁴ See Li, 1992.

⁸⁵ See Cannon, 1932.

⁸⁶ Edinburgh, 1771, s.v. Anatomy, 269.

squeezes the vessels so that the fluid is forced along, a system of valves preventing back flow; but until recently osmosis was thought to play some part.

IV. *Text and Tradition*

The text of *On Glands* depends crucially on the twelfth century manuscript Vaticanus graecus 276 (V).⁸⁷ Vaticanus graecus 276 (V) is the clear source of the available *recentiores*: Monacensis graecus 71 (Mo); Parisinus graecus 2146 (C), which is the manuscript on which Littré placed great reliance; Holkham 282, which is by the same hand as C (Constantine Mesobotes); Parisinus graecus 2255 (E), which is now recognized to be a copy of Cornarius' published edition of 1538, as had already appeared from Littré's collations.⁸⁸ The textual tradition of *On Glands* resembles that of *Airs, Waters, Places*, of *On Flesh* and of *Head Wounds*. As a recent critical edition of *Airs, Waters, Places* presents an authoritative account of the codicology and dating of all the relevant mss, there is no need to reiterate this information here.⁸⁹

For V, I have used the collations of Joly,⁹⁰ with the corrections of Anastassiou,⁹¹ supplemented by information generously supplied by Professor Jacques Jouanna. Mo shows two copyists at work: one uses Parisinus graecus 2140 (I) and the other (the hand of *On Glands*), though with a more mixed tradition, draws primarily upon V. I have checked Mo in digitized format, and can confirm that for *On Glands* the text is almost totally coincident with that of V, including errors, such as the very frequent mistakes in word division, and (some) corrections, these being similarly placed above the line or in the margin. In the *apparatus criticus* the frequent common errors in the tradition are not noted but see on 3 for common corrections as marginalia, on 4 for a common supralinear correction, on 1 for a rare (clearly incorrect) independent reading in Mo and on 5 for an independent (and correct) verbal form in Mo.

Successive editors faced with the peculiar vagaries of medical Ionic and the different orthographical preferences of different scribes and schol-

⁸⁷ On general aspects of the tradition, Diels, 1905 and Alexanderson, 1963 remain invaluable. See especially Diels 32 and Alexanderson 77–78, 81, 87–88.

⁸⁸ On V see Angeletti, 1991; on Mo see Mondrain, 1988.

⁸⁹ See Jouanna, 2003, 83–97 on *Aer.* and cf. Hanson, 1999, 13–35 on *VC*.

⁹⁰ Joly CUF t. 13 (Paris, 1978).

⁹¹ Anastassiou, 1980.

ars make their own compromises in imposing conventions on the disparate tradition. Here $\sigma\upsilon\nu$ - and $\gamma\upsilon\nu$ - are consistently preferred (though V has $\xi\upsilon\nu$ - and $\gamma\upsilon\gamma\nu$ -). I am aware of some inconsistency in verbal forms: although uncontracted forms are in principle preferred, I have not ventured to impose these rigidly throughout, but have permitted contracted forms (many doubtless the result of early scribal normalization) to coexist; thus, $\pi\omicron\nu\acute{\epsilon}\epsilon\iota\nu$ (as 2.1) and $\pi\omicron\nu\acute{\epsilon}\iota\nu$ (as 4.2) both appear.

On Glands has a place in all the early complete collections of Hippocratic texts, those of Cornarius and Foesius being particularly influential, and it is included in the important though limited (twenty-two works) selection of Zwinger.⁹² Foesius paid much attention to its idiosyncratic vocabulary in his medical lexicon *Oeconomia*⁹³ (see on 3, 4.1, 9, 14.2, 15). It is certain that Cornarius used Mo, among other sources, in establishing his text. It is more difficult to establish the sources used by Zwinger, whose marginalia contain readings of considerable interest. Some are drawn from Cornarius, either tacitly or with acknowledgment; others seem to be highly intelligent and original conjectures. This text has much independent value (see on 7.2, 12.1, 14.1, 14.2, 15, 16.1, 16.2, 17.1). Foesius' text, which is more conservative than his notes, is in turn the basis of that of van der Linden;⁹⁴ his translation is in places closely followed by Ermerins (as for example in 5). The two great editors of the nineteenth century, Littré and Ermerins, made substantial critical contributions to the interpretation of the text;⁹⁵ but Joly was the first editor to have knowledge of the earlier (pre-sixteenth century) manuscript tradition.

Joly commented that the treatise *On Glands* poses 'des problèmes multiples et fort délicats' as 'il a été très malmené par la tradition manuscrite' with the result that even Littré's text is 'assez souvent peu lisible'; Ermerins prints no translation for one section.⁹⁶ Indeed, many sections are very difficult to construe and to translate. The erratic punctuation suggests mechanical scribal copying, with poor overall comprehension. The author is frequently allusive: it seems he addresses a public trained in medicine, familiar both with current views and with some, perhaps his own, variations on them. Subsequent readers have not had these advantages. The text is marred by the intrusion of material which breaks

⁹² Cornarius, 1538; Zwinger, 1579; Foesius, 1595.

⁹³ Foesius, 1588.

⁹⁴ van der Linden, 1665.

⁹⁵ Littré 8. 550–575; Ermerins 3. 187–195 and also Prolegomena XXX–XXXII.

⁹⁶ Joly 103; Ermerins on 15.

sense and syntax. Some is due to the author's tendency to insert additional or expository information in parenthesis, but it may be that the erroneous incorporation in the text of explanatory matter, originally marginal glosses, plays a part also. Ermerins detected and deleted some instances (adopted in 7, 12, 14.2); others are here proposed (see on 2, 5, 13, 14.1, 15.1).

The modern chapter division is somewhat arbitrary. It would be possible to re-order 1–10, 11, 13–14, 15, 12, 16–17 or 1–10, 15, 11, 13–14, 12, 16–17 without loss of coherence and clarity. Two chapters, 12 and 15, which are both especially corrupt, seem especially misplaced or intrusive in content also; the subject of both is brain disorders. The author treats fluxes in 11 and then returns to them in 13; he treats the intestines in 5 (with regard to their hairlessness) and then returns to the topic in 9 (more generally). However, such awkward transitions and repetitions are perhaps no more than the natural consequence of compressed presentation of a complex subject.

The secondary tradition is slight. Discussion of it has been dominated by Galen's dismissive and disparaging judgment of the work (*Hippocratis de articulis liber ... commentarii*, 18A. 379 K.; see above Introduction II and below, on 1). Galen erroneously stated that *On Glands* was unknown to medical lexicographers. However, Erotian's gloss (Λ 24) λύματα· καθάρματα is surely drawn from the work (12), as λύματα is a Hippocratic hapax. However, the reading may be an early corruption (see on 12). Ermerins already allowed this attribution explicitly and Littré seems to accept it tacitly; however, Joly follows Nachmanson, who places λύματα among his 'nicht lokalisierte Glossen', and refuses to attribute the gloss to *On Glands*.⁹⁷ Other words which are glossed by Erotian and which occur in *On Glands* are probably drawn from other Hippocratic works: O 31 οὐλομελείης (1, 7; see on 1); A 6 ἀραιά (1, 16 *ter*; see on 1) and I 6 ἰκέλη (1, 9, 10, also adverb ἰκέλως 4, 8; see on 1).

If Erotian's gloss (Λ 24 λύματα) is indeed drawn from *On Glands*, it follows that Erotian placed *On Glands* between *Diseases* 1, from which Λ 23 comes, and *Diseases of Women*, the source of Λ 25. With these it would fall in one broad category, δίαίτα 'regimen', while *Nature of the Child* falls in another, αἰτιολογικά καὶ φυσικά 'works on causes and nature'.⁹⁸ There is a close affinity between *On Glands* and *Diseases of Women*

⁹⁷ Ermerins XXX; Littré 564, n. 10; cf. Potter, 1995, 106; Nachmanson, 1918, 58; 1917, 450, cf. 441; Joly 112.

⁹⁸ Nachmanson, 1918, 9.

(see Introduction II above), especially at the end of the work, which is embryological and gynaecological in content; perhaps this affinity was recognized in the original tradition. For what it is worth, the manuscript V contains most of the gynaecological texts (including two copies of *Superfetation*), and also *On Generation-Nature of the Child* but not *Diseases* 4, and not *Diseases* 1.⁹⁹

Several words glossed by Galen appear in *On Glands*, though that is probably not his source, for instance ψαφαρόν and ἐκβρόησσει, cf. ἀπεβρόάσσετο (*Linguarum Hippocratis explicatio*, 19. 156 K. and 19. 95, cf. 83 K.; see on 1, 4.1). There is relevant material too in Hesychios (see on 2) and Pollux (see Introduction III A).

⁹⁹ Alexanderson, 1963, 88.

REFERENCES AND ABBREVIATIONS

Anon. Lond.	Anonymus Londinensis (ed. Diels, 1893; Jones, 1947)
BMD	<i>Black's Medical Dictionary</i>
CIH	Colloques Internationaux Hippocratiques
DGP	J.D. Denniston, <i>The Greek Particles</i> , 2nd edn (Oxford, 1954)
DK	H. Diels and W. Kranz, <i>Die Fragmente der Vorsokratiker</i> , 6th edn (Berlin and Zurich, 1952)
Ermerins	ed. <i>On Glands</i> : Ermerins (1859–1864), vol. 3 (1864), 185–195
GMT	W.W. Goodwin, <i>Syntax of Moods and Tenses of the Greek Verb</i> (London, 1889)
HC	Hippocratic Corpus
Joly	ed. <i>On Glands</i> : CUF Hippocrate t. 13 (Paris, 1978), 113–129
Littre	ed. <i>On Glands</i> : Littré (1839–1861), vol. 8 (1853), 550–575
LSJ	H.G. Liddell, R. Scott and H.S. Jones, <i>Greek-English Lexicon</i>

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CONSPECTUS SIGLORUM

V	Vaticanus graecus 276, s. XII
Mo	Monacensis graecus 71, s. XV
C	Parisinus graecus 2146, s. XVI
E	Parisinus graecus 2255, s. XVI
Ho	Holkhamensis graecus 282, s. XVI

TEXT

I

1. περὶ δὲ ἀδένων οὐλομελὴς ὧδε ἔχει. φύσις μὲν αὐτῇσι σπογγῶδες, ἀραιαὶ μὲν καὶ πίονες, καὶ ἔστιν οὔτε σαρκία ἵκελα τῷ ἄλλῳ σώματι, οὔτε ἄλλο τι ὅμοιον τῷ σώματι, ἀλλὰ ψαφαρὰ καὶ φλέβας ἔχει συχνάς· εἰ δὲ διατάμοις, αἰμορραγίη λάβρος· τὸ εἶδος λευκαὶ καὶ οἶον φλέγμα, ἐπαφωμένῳ δὲ οἶον εἶρια· κῆν ἐργάσῃ τοῖς δακτύλοις ἐπὶ πολὺ βηισά- 5
μενος, ἢ ἀδὴν ὑγρὸν ἀφήσιν ἐλαιῶδες, καὶ αὐτὸ θρύπτεται πολλὰ καὶ ἐξαπόλλυται.

II

1. πονέουσι δὲ οὐ κάρτα, ἀλλὰ τὸ ἄλλο σῶμα, ἐπὴν πονέωσι, πονέουσι δὴ δι' ἰδίην νοῦσον· παῦρα δὲ καὶ τῷ σώματι συμπονέουσιν. αἱ νοῦσαι· φύματα γίνονται, καὶ χοιράδες ἀναπηδῶσι, καὶ πῦρ ἔχει τὸ σῶμα· 10
πάσχουσι δὲ ταῦτα, ἐπὴν ὑγρασίης πληρωθῆωσι τῆς ἀπὸ τοῦ ἄλλου σώματος ἐπιρρεούσης ἐς αὐτάς.

2. ἐπιρρεῖ δὲ ἐκ τοῦ ἄλλου σώματος διὰ τῶν φλεβῶν, αἱ δι' αὐτῶν τέτανται πολλαὶ καὶ κοῖλαι, ὥστε ἀκολουθεῖν τὸ ὑγρὸν ὃ τι ἂν ἔλκωσιν εὐπετέως ἐς αὐτάς· κῆν πολὺ ἔη καὶ νοσῶδες ἢ ῥοή, συντείνουσιν 15
αἱ ἀδένες ἐπὶ σφέας [τὸ ἄλλο σῶμα]· οὕτω πυρετὸς ἐξάπτεται, καὶ αἰείρονται καὶ φλογιῶσιν αἱ ἀδένες.

1 αὐτῇσι Craik: αὐτέοισιν ἢ V: αὐτέῃσι Zwinger: αὐτοῖσι Ermerins | σπογγῶδες V: σπογγώδης Littré 2 ἀραιαὶ edd.: ἀρεαὶ V | καὶ edd.: αἱ V | οὔτε edd.: ὅτε V 3 ψαφαρὰ V: καθαρὰ Mo 4 αἰμορραγίη λάβρος V: αἰμορραγεῖ λάβρως Ermerins 5 ἐπαφωμένῳ Ermerins: ἐπαφωμένῳ V | ἐργάσῃ Craik: ἐργάσῃ V: ὀργάσῃ Ermerins 6 αὐτὸ V: αὐτὴ edd. 8 οὐ κάρτα V: οὐ κάρτα αὐταὶ Heidel 8-9 τὸ ἄλλο σῶμα, ἐπὴν πονέωσι, πονέουσι δὴ δι' ἰδίην νοῦσον Craik: τῷ ἄλλῳ σώματι ἐπὴν πονέουσι δὲ ἢ δι' ἰδίην νοῦσον V: τῷ ἄλλῳ σώματι, ἐπὴν πονέωσι, τὴν ἰδίην νοῦσον μεταδιδόασιν Ermerins: τῷ ἄλλῳ σώματι, ἐπὴν πονέωσι, δίδουσιν ἰδίην νοῦσον Joly: τῷ ἄλλῳ σώματι, ἐπὴν πονέωσι γε, συμπονέουσι μᾶλλον Heidel 10 ἔχει τὸ σῶμα V: τὸ σῶμα del. Ermerins 11 ἀπὸ Ermerins: ἐπὶ V 15 ἔη edd.: εἴη V | ἢ ῥοή del. Ermerins 16 et 17 αἱ edd.: οἱ V | τὸ ἄλλο σῶμα del. Craik 17 φλογιῶσιν Ermerins: φλογῶσιν V

TRANSLATION¹

I

1. On glands as a whole, this is the situation. Their character is spongy; they are fine and fatty; they are neither fleshy parts like the rest of the body, nor anything else similar to the body; but they are loose-textured and have numerous vessels. If you were to cut through it—(there would be) profuse haemorrhage. In appearance (they are) white and like phlegm; to the touch (they are) like wool. And if you work it with the fingers using a lot of force, the gland discharges an oily moistness and that is for the most part broken up and dissipated.

II

1. They do not suffer very much trouble, but when they do suffer they make the rest of the body suffer through their own ailment. But they in turn suffer little with the (rest of the) body. Their ailments: pustules arise, scrofulous swellings erupt and fever grips the body. They are subject to these when they are filled with moisture from the rest of the body flowing into them.

2. This flows in from the rest of the body through the vessels, which are hollow and extend through the glands in great numbers, with the result that whatever moistness they (= the vessels) draw proceeds readily into them (= the glands). And if the stream is copious and diseased, the glands become taut within themselves [the rest of the body]. In this way, fever is kindled and the glands become swollen and inflamed.

¹ (...) indicates addition of material to amplify translation; [...] indicates editorial deletion of intrusive content from text; <...> indicates editorial insertion to text.

III

1. ἀδένες δὲ ὑπείσιν ἐν τῷ σώματι πλείους ἢ μέζους ἐν τοῖς κοίλοις αὐτοῦ καὶ ἐν τοῖσιν ἄρθροισι, καὶ ὅπου ἐν τοῖσιν ἄλλοις ὑγρηδόν, καὶ κατὰ τὰ αἱματώδεα χωρία· αἱ μὲν ὥς τὸ ἐπιρρέον ἄνωθεν ἐς τὰ κοῖλα ἐπιδεχόμεναι ἐπὶ σφέας ἔλκουσιν, αἱ δὲ ὥστε τὴν αὖτις γινομένην ὑπὸ τῶν πόνων ὑγρασίην ἐκδεχόμεναι ἐν τοῖσιν ἄρθροισιν τὴν πληθύν, 5 ἦντινα μεθίησι τὰ ἄρθρα. οὕτω πλάδος οὐκ ἔνι ἐν τῷ σώματι· εἰ γὰρ τι καὶ γίνοιτο παραντίκα, οὐκ ἂν ἐπιγίνοιτο πλάδος ὀπίσω· καταναίσι- μούται γὰρ τὸ πολὺ καὶ τὸ ὀλίγον ἐς τὰς ἀδένας.

IV

1. καὶ οὕτω τὴν πλεονεξίην τοῦ ἄλλου σώματος αἱ ἀδένες κέρδος ποιούμεναι τροφή συντροφος αὐτῆσιν ἐστίν· ὥστε ὅπου τελματώδεα, 10 ἐκεῖ καὶ ἀδένες· σημῆιον, ὅπου ἀδὴν, ἐκεῖ καὶ τρίχες· ἡ γὰρ φύσις ποιεῖ ἀδένας καὶ τρίχας. ἅμφω χρέος τῷτὸ λαμβάνουσιν· αἱ μὲν ἐς τὸ ἐπιρρέον, ὥς καὶ ἔμπροσθεν εἴρηται, αἱ δὲ τρίχες τὴν ἀπὸ τῶν ἀδένων ἐπικαιρίην ἔχουσαι φύονται τε καὶ αὖξονται, ἀναλεγόμεναι τό τε περισσὸν καὶ ἐκβρασσόμενον ἐπὶ τὰς ἐσχατίας. 15

2. ὅπου δὲ αὖον ἐὸν τὸ σῶμα, οὔτε ἀδὴν οὔτε θρίξ· τὰ δὲ ἀπαλὰ καὶ πονεύμενα καὶ κάθυγρα, ἀδὴν ὥδε καὶ τρίχες· ἀδένες δὲ καὶ κατὰ τοῖν οὐάτοι καὶ ἔνθα ἐκατέρωθεν κατὰ τὰς σφαγὰς τοῦ τραχήλου, τρίχες τε ἐνταῦθα ἐκατέρωθεν· ἐπὶ τῇσι μασχάλησιν ἀδένες καὶ τρίχες· βουβῶνες καὶ ἐπίσιον ἰκέλως μασχάλησιν, ἀδένες καὶ τρίχες. ταῦτα μὲν 20 κοῖλα τῶν ἐν τῷ σώματι καὶ ῥηίδια ἐς περιουσίην ὑγροῦ· καὶ γὰρ πονεῖ ταῦτα καὶ κινεῖται μάλιστα τῶν ἐν τῷ σώματι.

2 ὑγρηδόν Foesius: ὑγρηδόν V 4 ἔλκουσιν Craik: ἔλκωσιν V 5 ὑγρασίην V in marg.: ἐργασίην V | ἐν τοῖσιν ἄρθροισιν V: ἐξαρθύωσι Littre 7 ἐπιγίνοιτο V: ἔτι γίνοιτο (fortasse) Craik | πλάδος del. Ermerins 10 ποιούμεναι V: ποιέονται καὶ Joly 12 ἅμφω V: καὶ ἅμφω Ermerins 16 αὖον ἐὸν supra lineam V: αὐτέον V: αὖον Ermerins 17 ἀδὴν ὥδε V: ἀδενώδεα Ermerins | τρίχες edd.: τρίχας V | ἀδένες edd.: ἀδένας V 18 οὐάτοι V: ὠτοι Joly 19 ἀδένες Joly: ἀδὴν V

III

1. Glands are present in the body in greater number or greater size in its cavities and in its joints, and wherever in other (parts) (there is) moisture, and in the region of places which are full of blood: some, receiving what flows in from above into the cavities, draw (that) into themselves while others receiving in the joints moisture resulting from exertions, the superabundance which the joints discharge, (draw that into themselves). In this way, there is no wetness in the body: for even if there were some wetness at one time, there would not still be wetness later. For, much or little, it is absorbed into the glands.

IV

1. And in this way, the glands make capital of excess in the rest of the body, and this is their natural nourishment. It follows that wherever (there are) soggy (areas), there are glands there too. (Here is) a proof: where there is a gland, there are hairs too. For nature creates glands and hairs. Both take up the same requirement: first, (glands) in response to matter flowing in, as previously stated; second, hairs appear and grow with opportune input from the glands, taking up what is superfluous and gushing out to distant parts.

2. Where the body is dry, there is neither gland nor hair. But as to (areas which are) yielding, exercised and moist—there is both gland and hair as described. There are glands beside the ears and there, on both sides beside the jugulars of the neck; and there are hairs there on both sides. At the armpits there are glands and hairs. Groin and pubic area, just like armpits: glands and hairs. These are the cavities of the body and most prone to superfluity of the moist. For these areas suffer trouble most and are most readily disturbed of all parts of the body.

V

1. τὰ δ' ἄλλα ὅποσα ἀδένας ἔχει μοῦνον, οἷον ἔντερα—ἔχει γὰρ καὶ ταῦτα ἀδένας [ἐς τὸ ἐπίπλοον] μέζοντας—τρίχας οὐκ ἔχει. καὶ γὰρ ἐν τοῖσι τέλμασι τῆς γῆς καὶ καθύγροισιν οὐ φύεται τὸ σπέρμα, οὐδὲ ἐθέλει ἀναβαίνειν τῆς γῆς ἄνω, ἀλλ' ἀποσῆπεται καὶ ἀποπνίγεται τῇ
 5 πλεονεξίῃ· βιῆται γὰρ τὸ σπέρμα.

2. βιῆται δὲ καὶ ἐν τοῖσιν ἐντέροισιν ἢ πληθὺς καὶ τὸ ὑγρὸν πολὺ, καὶ οὐκ ἂν φύσαι τρίχας. αἱ δὲ ἀδένες μέζονες ἢ που ἄλλοθι τοῦ σώματος· καὶ νέμονται αἱ ἀδένες ἐν τοῖσιν ἐντέροισιν ἐκπιεζόμεναι τὸν πλάδον, τὰ δὲ ἔντερα ἐκ τῶν τευχέων ἐς τὰ ἐπίπλοα ἐκδέχεται καὶ καθίησι τὴν
 10 ὑγρασίην· τὸ δὲ ἐπίπλοον διαδιδοῖ τῇσι δὴ ἀδέσιν.

VI

1. ἔχουσι καὶ οἱ νεφροὶ δὴ ἀδένας· καὶ γὰρ οὗτοι κορίσκονται πολλῆς ὑγρασίης· μέζους δὲ αἱ ἀδένες ταύτη ἢ αἱ ἄλλαι ἀδένες ἐοῦσαι· οὐ γὰρ ἐμπίνεται τοῖσι νεφροῖσι τὸ ὑγρὸν τὸ ἐπιρρέον, ἀλλὰ διαρρεῖ ἐπὶ κύστιν κάτω, ὥστε ὅ τι ἂν ἀποκερδάνωσιν ἀπὸ τῶν ὀχετῶν, τοῦτο ἔλκουσι
 15 πρὸς σφέας.

VII

1. καὶ ἄλλαι δὲ εἰσιν ἐν τῷ σώματι ἀδένες σμικραὶ καὶ πάνυ, ἀλλ' οὐ βούλομαι ἀποπλανᾶν τὸν λόγον· ἐς γὰρ τὰς ἐπικαίρους ἢ γραφή. νῦν δὲ ἀναβήσομαι τῷ λόγῳ, καὶ ἐρέω περὶ ἀδένων οὐλομελὴς τραχήλου· τράχηλος τὰ μέρη αὐτοῦ ἐκότερα ἔνθα καὶ ἔνθα ἀδένας ἔχει, καὶ
 20 παρίσθημα καλέονται αἱ ἀδένες αὗται.

2 ἐς τὸ ἐπίπλοον (ἐπιπλοῖον V) del. Craik 3 οὐδὲ Craik: οὔτε V 7 ἂν φύσαι V: ἔα φύσαι edd. 8 ἐκπιεζόμεναι C Mo: ἐκπιεζούμεναι V: ἐκπιεζόμενον Ermerins 10 τῇσι δὴ ἀδέσιν Craik: τῇσιν δὲ ἀδένησιν V: τῇσιν ἀδέσιν van der Linden 11 ἔχουσι καὶ οἱ νεφροὶ δὴ ἀδένας Craik: ἔχουσι καὶ οἱ νεφροὶ δὲ ἀδένας V: εἰσὶ δὲ καὶ οἱ νεφροὶ ἀδένες (fortasse) Ermerins 12 ταύτη edd.: ταῦτα V 13 ἐμπίνεται edd.: ἐμπίεται V

V

1. All other (places) which just have glands, such as the intestines—for these too have fairly large glands [towards the omentum]—these do not have hair. In the same way in fact in bogs and moist parts of the earth, seed does not germinate and fails to go up through the earth, but rots away and suffocates through excess (of moisture), for it overwhelms the seed.

2. In the intestines too superabundance and much moistness overwhelms and (it is not possible) to grow hairs. The glands (there) are larger than anywhere else in the body. The glands in the intestines press out and distribute wetness: the intestines receive the moisture from the channels, take it to the omentum and send it down. The omentum distributes it by the glands.

VI

1. The kidneys too have glands. For these too are saturated with much moisture. The glands in this situation are bigger than the other glands. For the moistness which flows in is not absorbed by the kidneys but flows through to the bladder below; the result is that they draw to themselves whatever gain they can get from the ducts.

VII

1. Furthermore, there are other really small glands in the body, but I do not wish to digress in my account; for my treatise is directed towards the most important ones. As things are, I shall continue in my account and I shall speak about glands in the neck as a whole. The neck, with regard to both sides, has glands on both (left and right), and these glands are called ‘tonsils’.

2. χρειή τοιήδε· ἡ κεφαλὴ ὑπερκεῖται ἄνω κοίλῃ ἐοῦσα καὶ περιφερῆς καὶ πλήρης τῆς περὶ αὐτὴν ἀπὸ τοῦ ἄλλου σώματος ὑγρασίης· καὶ ἅμα ἀναπέμπει τὸ σῶμα ἀτμούς ἐς τὴν κεφαλὴν παντοίους ἄνω, οὓς αὐτὶς ἡ κεφαλὴ ὀπίσω ἀφίησιν· οὐ γὰρ δύναται ἐμμένειν τὸ ἐπιρρέον οὐκ ἔχον ἔνθα ἔδρην, ἣν μὴ τὴν κεφαλὴν πονῇ, τότε οὐκ ἀνίησιν, ἀλλ' αὐτοῦ 5 κρατεῖ· ἐπὶ δὲ ἀντὶ τὴν ἔλξιν ἐς τὰς ἀδένας, ἡ ῥοὴ γίνεται καὶ οὐδὲν λυπεῖ τὸ ῥεῦμα, ἔστ' ἂν ὀλίγον τε ἦ καὶ σύμμετρον καὶ ἐγκρατεῖς ἔωσιν αἱ ἀδένες·

3. ἦν γὰρ καὶ πολὺ ἐπιρρυῇ [δριμύ], ἦν μὲν ἡ δριμὺ καὶ χολῶδες, φλεγμαίνει καὶ συνοιδίσκεται καὶ συντείνει ὁ τράχηλος, καὶ οὕτω προίει ἐς 10 οὓς· κῆν μὲν ἐς ἑκάτερα τὰ μέρη, ἑκάτερον· ἦν δὲ ἐς θάτερον, πονεῖ θάτερον· ἦν δὲ ἡ φλεγματοῦδες καὶ πολὺ καὶ ἀργὸν ἡ ῥοή, φλεγμαίνει δὴ καὶ ὧδε· καὶ ἡ φλεγμονή, στάσιμον ἐὼν ὑγρόν, χοιράδες ἐγγίνονται· αὗται [χείρους] αἱ νοῦσοι τραχήλου.

VIII

1. μασχάλησι δὲ συρρεῖ μὲν καὶ ἐνταῦθα, ἀλλ' ὅταν πλῆθος ἦ 〈ἦ〉 15 δριμεῖς ἰχώρες, καὶ ὧδε γίνονται φύματα. κατὰ ταῦτα καὶ ἐν τοῖσι βουβῶσιν ἔλκει τὴν ἀπὸ τῶν ὑπερκειμένων ὑγρασίην ἡ ἀδὴν· ἄλλως εἰ πλῆθος λάβοι, βουβωνοῦται καὶ διαπνίσκεται καὶ φλεγμαίνει ἰκέλως μασχάλησί τε καὶ τραχήλῳ· τὰ δ' αὐτά οἱ δοκεῖ παρέχειν ἀγαθὰ καὶ κακά. καὶ ταῦτα μὲν ἀμφὶ τῶνδε. 20

1 χρειή Zwinger: χρειῇ V 2 πλήρης Zwinger marg.: om. V 3 τὸ σῶμα om. V: restituit supra lineam 5 ἀνίησιν V: ἀφίησιν Ermerins 9 δριμύ del. Craik | χολῶδες Zwinger marg.: κολῶδες V 11 ἐς edd.: om. V 13 δὴ van der Linden: δὲ V 14 χρειούς V: del. Ermerins: χείρους edd.: χοίρων Zwinger marg. 15 πλῆθος ἦ ἢ Ermerins: πλῆθος ἦ καὶ Schmidt: πλῆθος ἦν V 17 ἄλλως V: ἄλλως τ' Joly

2. Their function is something like this. The head is situated above, hollow and round, and full of the moisture (which flows) around it from the rest of the body. Simultaneously, the body sends all kinds of vapours up to the head, which in turn the head transmits back. For the matter which flows in cannot remain inside, not having a proper place there—unless it causes the head to suffer, in which case it does not release, but contains, it; but when it releases the stuff it has drawn (to it) to the glands streaming occurs, and the flow does no harm so long as it is slight and proportional and the glands are able to contain it.

3. But if copious [and pungent] matter rushes in—if on the one hand it is pungent and somewhat bilious, the neck becomes full of fluid and starts to swell and becomes taut, and so sends the flow to the ear—and if to both sides, both ears; if to one side, it causes one to suffer—if on the other hand the stream is somewhat phlegmy and copious and slow-moving, it becomes full of fluid in this way too: that the phlegmy matter, being static moistness, becomes scrofulous swellings (in the neck). These are the [worse] ailments of the neck.

VIII

1. Matter flows together in the armpits—there too—but when there is an excess ⟨or⟩ pungent noxious matter in this way too pustules form. In the same way, in the groin too the gland draws the moisture from (the parts) situated above it. Otherwise, if it should take an excess, it swells and becomes purulent and is filled with fluid just as (in the case of) armpits and neck. The gland seems to accord it the same benefit or harm. That is enough on this subject.

IX

1. τὰ δὲ ἔντερα ἔχει κόρον πολὺν ἀπὸ τε σιτίων καὶ πότων· ἔχει δὲ καὶ τὴν ὑπὸ τοῦ δέρματος ὑγρασίην· αὕτη πᾶσα ἀπανασιμοῦται ἱκέλη τοῖς πρόσθεν· νούσους δὲ οὐ ποιεῖ τὰ πολλὰ, ὅπως περ καὶ ἐν τοῖσιν ἄρθροισι γίνεται· συχναὶ γάρ τοι ἀδένες καὶ ἀναπετεῖς, καὶ οὐ κοῖλαι, καὶ οὐ πολὺ πληθὺς ἐπαυρισκόμεναι ἢ ἑτέρῃ τῆς ἑτέρης, ἐπεὶ μᾶλλον 5 πλεονεκτεῖν ἐθέλουσα οὐδεμία τότε πλεον ἔχειν δύναται, ἀλλ' ὀλίγον ἐκάστη τὸ συρρέον ἐς τὸ ἄρθρον ἐς πολλὰ διαιρεόμενον· ἰσότης ἐστὶν αὐτῇσιν.

X

1. ἡ κεφαλὴ καὶ αὕτη ταῖς ἀδέσιν ἔχει ἱκελα, τὸν δὲ ἐγκέφαλον· ἐγκέφαλος γὰρ καὶ λευκὸς καὶ ψαφαρός, ὅπως περ καὶ ἀδένες, καὶ ταυ- 10 τὰ ἀγαθὰ τῇσιν ἀδέσι ποιεῖ τὴν κεφαλὴν· ἐοῦσαν διὰ τὰ εἰρημένα μοι τιμωρέων ὁ ἐγκέφαλος ἀποστερεῖ τὴν ὑγρασίην, καὶ ἐπὶ τὰς ἐσχατίας ἔξω ἀποστέλλει τὸ πλεον ἀπὸ τῶν ῥόων. μέζων δ' ὁ ἐγκέφαλος τῶν ἄλλων ἀδένων, καὶ αἱ τρίχες μέζους ἢ αἱ ἄλλαι τρίχες· μέζων τε γὰρ ὁ ἐγκέφαλος καὶ ἐν εὐρυχωρίῃ κεῖται τῇ κεφαλῇ. 15

XI

1. ποιεῖ δὲ νούσους καὶ ἥσσονας καὶ μέζοντας ἢ αἱ ἄλλαι ἀδένες· ποιεῖ δὲ ὁπόταν ἐς τὰ κάτω τοῦ σώματος τὴν σφετέρην πλεονεξίην ἀποστείλῃ. ῥόοι δὲ ἀπὸ κεφαλῆς ἕως ἀποκρίσιος δι' ὧτων κατὰ φύσιν, δι' ὀφθαλμῶν, διὰ ῥινῶν· τρεῖς οὗτοι καὶ ἄλλοι δι' ὑπερώης ἐς φάρυγγα, ἐς στόμαχον· ἄλλοι διὰ φλεβῶν ἐπὶ νωτιαῖον, ἐς τὰ ἰσχία, οἱ πάντες 20 ἐπτά.

6 ἐθέλουσα edd.: ἐθέλουσαν V | οὐδεμία Joly: οὐδὲ μὴν V: οὐδὲ μίη edd. | πλεον Joly: πλήν V: πλήθος edd. | ἔχειν edd.: ἔχον V 6-7 ἀλλ' ὀλίγον ἐκάστη Littre: ἐς ὀλίγον ἐκάστης V: ἀλλ' ὀλίγου Ermerins 7 τὸ συρρέον ἐς Joly: συρρέοντες (ξυρρέοντες) V: ξυρρέοντος Ermerins | διαιρεόμενον V: διαιρεομένου Ermerins 9 αὕτη V: αὐτὴ Ermerins | ταῖς ἀδέσιν ἔχει ἱκελα, τὸν δὲ ἐγκέφαλον Craik: τὰς ἀδένας ἔχει τὸν ἐγκέφαλον ἱκελα δὲ ἀδένι V: τὰς ἀδένας ἔχει τὸν ἐγκέφαλον ἱκελον ἀδένι Cornarius: ἔχει τὸν ἐγκέφαλον ἱκελον ἀδένι Ermerins 10-11 ταυτὰ edd.: ταῦτα V 11 ἐοῦσαν V: ἐοῦσαν γὰρ Ermerins: ἐνεοῦσαν γὰρ Joly 14 ἢ αἱ V corr.: καὶ V 20 τὰ ἰσχία Littre: τὸ αἶμα V

IX

1. The intestines have a great saturation from food and drink. In addition, they contain the moisture (present) under the skin. All this is absorbed in the same way as in the previous cases. It does not cause ailments for the most part, just as happens in the joints too. For indeed the glands are numerous and outspread and not hollow, and they do not get benefit of superabundance one more than another, since even if it did wish to gain more none can have more, but each one gets a little of matter flowing together into the joint, distributed in many shares. There is parity among them.

X

1. As to the head, this too has (matter) like glands, the brain. For the brain is both white and loose-textured, just as glands (are) too, and accords the same benefits to the head as glands do (elsewhere). When, in accordance with my account, it is present, the brain giving relief removes the moisture, and sends the excess from the fluxes away out to distant parts. The brain is bigger than the other glands, and the hairs (of the head) longer than the other hairs. For the brain is bigger and it occupies a large space, the head.

XI

1. The brain causes ailments both lesser and greater than those caused by the other glands. It causes them whenever it sends its own excess to the lower parts of the body. There are natural fluxes to the point of secretion, by the ears, by the eyes and by the nose: these three. There are others by the palate to the trachea and to the oesophagus. There are others by the vessels to the spine and to the hips: seven in all.

XII

1. οὗτοι τοῦ τε ἐγκεφάλου λύματά εἰσιν ἀπιόντες· καὶ εἰ μὴ ἀπίοιεν, νοῦσος αὐτῶ. οὕτω δὲ καὶ τῷ ἄλλῳ σώματι, ἣν ἐς τὰ ἔνδον ἀπίωσι καὶ μὴ ἔξω, καὶ αὐτοῖς ὄχλος πολὺς, κᾶνδοθεν ἔλκοι, καὶ δριμὺ μένει. καὶ εἰ πρόοιτο ὁ ἐγκέφαλος ῥεῦμα, ταῖς ἐπιρροαῖς ἐσθίει καὶ ἔλκοι. καὶ τὸ μὲν ἐπὶ ἣν ἢ πληθὺς κατιὼν ἄλές, οὐκ ἀνέχει ὁ ῥόος, ἔστ' ἂν 5 ἐξαρούηται τὴν πληθύν τοῦ κατιόντος· καὶ τὸ μὲν ἐπιρροέον ἀποπέμπων ἔξω, ἕτερον δὲ ἐσδεχόμενος, ἐς τὸ ὅμοιον αἰεὶ καθιστάμενος· τὰ τε ὑγρὰ ἔλκοι καὶ ποιεῖ νούσους.

2. ἄμφω δὲ ἐν ἀκηδΐᾳ καταγνιοῖ τὴν φύσιν· καὶ ἣν πάθη, δὴ ἐστὸν κακία· τὰ μὲν γὰρ πάθη τῆς φύσεως [οἱ προειρημένοι ῥόοι] δυσφορέ- 10 ονσι τὸ πληθὺς, καὶ ὁδᾶζονται τὸ ἄλογον καὶ οὐ σύνηθες ἔόν· ὁ δὲ ἐγκέφαλος πῆμα ἴσχει καὶ αὐτὸς οὐχ ὑγιαίνων· ἀλλ' εἰ μὲν δάκνοιτο, τάραχον πολὺν ἴσχει, καὶ ὁ νοῦς ἀφρονεῖ καὶ ὁ ἐγκέφαλος σπᾶται καὶ ἔλκοι τὸν ὅλον ἄνθρωπον, ἐνίστε δ' οὐ φωνέει καὶ πνίγεται, ἀποπληξίῃ τῷ πάθει τοῦνομα. ἀλλ' ὅτε δριμὺ μὲν οὐ ποιεῖ αὐτὸ ῥεῦμα, πληθὺς δ' 15 ἔόν τὸ ἐμπεσὸν πονεῖ τοῦτο, καὶ ἡ γνώμη ταράσσεται, καὶ περιέεισιν ἄλλοιᾳ φρονέων καὶ ἄλλοιᾳ ὁρέων, φέρων τὸ ἦθος τῆς νούσου σεσηρόσι μειδιήμασι καὶ ἄλλοκότοισι φαντάσμασιν.

XIII

1. ἀλλ' οἷς ῥόος ἐπ' ὀφθαλμούς, ὀφθαλμῖαι, καὶ οἰδέουσιν αἱ ὀψεις. εἰ δὲ ἐπὶ ῥίνας ὁ κατάρροος, ὁδᾶζονται μυκτῆρας, καὶ ἄλλο οὐδὲν δεινόν· 20 αἱ τε γὰρ ὁδοὶ τούτων εὐρέες καὶ ἱκαναὶ τιμωρεῖν σφίσι· πρὸς δὲ καὶ ἀσύστροφον τὸ ἀπὸν αὐτῇσι.

1 λύματα V: λημία (fortasse) Craik 2 ἣν ἐς τὰ edd.: τινὲς τὰ V 3 αὐτοῖς V: αὐθις Foesius | κᾶνδοθεν ἔλκοι Littré: χανδόθεν ἔλκοιν V 3-4 μένει. καὶ εἰ Craik: μένει V: μὲν εἰ Zwinger marg. 4 ταῖς ἐπιρροαῖς Craik: τὰς ἐπιρροὰς V 5 ἄλές Joly: ἄλες V: ἄλεις edd. | ἀνέχει Littré: ἂν ἔχη V 6 ἐξαρούηται Ermerins: ἐς ἀριατε V: ἐσαρούηται Littré 8 ἔλκοι Craik: ἔλκη V: ἔλκει edd. 10 οἱ προειρημένοι ῥόοι del. Ermerins 11 ὁδᾶζονται τὸ V: ὁδᾶζον καὶ Joly 13 ἀφρονεῖ V corr. (ἀφρῶνει V): ἀφρῶνει Littré 14 ἐνίστε Dietz: ἐν ἐωντῶ V 15 ἀλλ' ὅτε V: ἄλλοτε Littré 16 περιέεισιν Littré: περιήσιν V 17 σεσηρόσι edd.: ἐσηρόσει V 19 ἀλλ' οἷς Craik: ἄλλος V | ὀφθαλμῖαι del. Ermerins 21 εὐρέες V: εὐρέαι Ermerins

XII

1. These fluxes are impure matter going off from the brain. And if they did not go off, it would have an ailment. In the same way, in the rest of the body, if they go off inside and not out, it both gives them (*sc.* sufferers) much trouble and it ulcerates inside (the body), and pungent stuff lingers. And if the brain should emit a flow, it corrodes and ulcerates by its streamings. And if the advancing matter is a superabundance going down in a rush, the flux does not let up until it (*sc.* the body) drains the superabundance of matter going down, sending (some of) the matter flowing onwards outside (the body), while taking some other of it (inside), always returning to the same state (as before). Moisture ulcerates and causes ailments.

2. Both (types of flux) if neglected weaken the constitution. And if it is affected, there are two evils. First, with regard to constitutional affections [the aforementioned fluxes] they (*sc.* sufferers) do not tolerate superabundance well and are irritated by the inexplicable and unaccustomed. Second, the brain has a problem, it too being unhealthy. If it is stung, it is prone to much disturbance, the mind loses reason and the brain suffers spasm and ulcerates the person as a whole; sometimes he is speechless and chokes: the name of the affection is apoplexy. But if the flow does not cause a pungent sensation but, the stuff arriving being superabundant, this causes trouble, the intellect is disturbed and (the sufferer) survives disordered in thinking and disordered in seeing, tolerating the nature of the malady with gaping grins and strange visions.

XIII

1. But in people with flux to the eyes (there are) ophthalmias, and the seeing parts swell. And if the downward flux (*is*) to the nose, they (*sc.* sufferers) feel irritation in their nostrils and there is no other harm. For the nasal passages are broad and able to give themselves relief; furthermore, what goes off (= issues) from them is really not prone to coagulate.

2. τὰ δὲ οὐατα σκολιὸς μὲν πόρος καὶ στεινός· ὁ δ' ἐγκέφαλος πλησίον αὐτοῦ αὐτοῖσιν ἐμπιέζεται· νοσεόντων δὲ τὴν νοῦσον ταύτην, τὰ πολ-
λὰ ἀποκρίνεται καὶ [τὸ οὐς] ἀπὸ τῆς πυκινῆς ῥοῆς ἀνὰ χρόνον κεχώ-
ρισταί τε καὶ ῥεῖ δυσῶδες πῦον. οὕτως ἐς τὰ ἔξω δῆλοι τῷ ὀφθαλμῷ
ῥόοι καὶ οὐ πάμπαν θανατώδεις.

5

XIV

1. ἦν δὲ ὀπίσω τὸ ῥεῦμα ἧ (καὶ ἦ) δι' ὑπερῶς τὸ ἀφικόμενον φλέγμα
ἐς τὴν κοιλίην, ῥέουσι μὲν καὶ αἱ κοιλίαι τούτων, νοσέουσι δὲ οὐ· ἄλ-
λὰ μένοντος κάτω τοῦ φλέγματος, εἰλεοὶ [τὰ πάθη χρόνια] · ἄλλοισι
δι' ὑπερῶς ἐπὶ φάρυγγα, ἦν πολὺ ῥυῆ καὶ ἐπὶ πολὺ, αἱ νοῦσοι φθινά-
δες· κορίσκονται γὰρ τοῦ φλέγματος οἱ πλεύμονες καὶ γίνεται τὸ πῦον·
τοῦτο διεσθίει τοὺς πλεύμονας, καὶ οἱ νοσέοντες οὐ ῥῆιον περιγίνον-
ται· καὶ ἡ γνώμη τοῦ ἱητροῦ, καὶ ἦν ἀγαθὸς καὶ ἦν ἀγχίνους, τὰ πόλλ'
ἀσυντετέι τῆς προφάσιος.

2. ἄλλη νοῦσος διὰ φλέβων ἐπὶ νωτιαῖον ἀπὸ καταρροῦν κεφαλῆς·
αἰσσει δὲ ἐνταῦθα ἐπὶ ἱερὸν ὀστέον, ἄγων τὴν ἐπιρροὴν ὁ νωτιαῖος, καὶ
ἐπανεθέτο τῇσι κοτύλῃσι τῶν ἰσχίων· [ἰσχία] καὶ ἦν ποιῆ φθίσιον, καὶ
μαραίνεται ὁ ἄνθρωπος ὥδε καὶ ὥδε καὶ ζῶειν οὐκ ἐθέλει· ταχὺ γὰρ
πονεῖ τὴν σπάθην, καὶ ἄμφω τῷ πόδε καὶ μηρῷ παρέπονται, καὶ αἰεὶ
τελέως ὄλλυνται χρόνῳ πολλῷ μελεδαινόμενοι, καὶ οὕτως ἀπηύδηκε
καὶ θνήσκει. ταῦτά μοι περὶ ῥόων ἀπὸ κεφαλῆς εἰρηται.

20

XV

1. καὶ πάθεα ἐγκεφάλου ἄλλα, παραφροσύνη καὶ μανίαι, καὶ πάντα
ἐπικίνδυνα, καὶ πονεῖ ὁ ἐγκέφαλος [καὶ αἱ ἄλλαι ἀδένες] · ἔχει γὰρ καὶ
τόνον καὶ ἄλλη συνόδος ἐνταῦθα πάλιν τοῦ σώματος.

1 οὐατα V: ὄτα Joly 1-2 πλησίον αὐτοῦ V: πλησίον ἐών Ermerins 2 νοσεόντων
Craik: νοσέω V: νοσέοντος Ermerins: νοσέων edd. 3 ἀποκρίνεται Craik: ἀποκρίνει
V | καὶ V: κατὰ Littré | τὸ οὐς del. Craik | ἀνὰ χρόνον V: καὶ ἀνὰ χρόνον Ermerins
3-4 κεχώρισταί Ermerins: ὠρισταί V: ὠρισταί Littré: alii alia 6 τὸ ῥεῦμα del. Joly |
ἦ (καὶ ἦ) Craik: ἦ V: ἦ Ermerins 7-8 ἄλλὰ μένοντος Ermerins: ἀναμένοντος V:
ἀναμένοντος δὲ Zwinger marg. 8 τὰ πάθη χρόνια del. Craik: καὶ πάθη χρόνια
Joly 12-13 πόλλ' ἀσυντετέι Craik: πόλλ' ἀσυντετεῖ Joly: πολλὰ ξυντετεῖν V 14
ἄλλη Zwinger: ἄλλ' ἢ V 15 αἰσσει edd.: αἰσει V | ἐνταῦθα V: ἐντεῦθεν Ermerins
16 ἰσχία del. Ermerins 16-17 καὶ μαραίνεται V: μαραίνεται van der Linden 19
ἀπηύδηκε edd.: ἀπήνδηκε V 20 περὶ om. V: add. edd. 21 ἄλλα Ermerins: καὶ
ἄλλαι νοῦσοι V 22 καὶ αἱ ἄλλαι ἀδένες del. Craik 23 τόνον V: πόνον Cornarius
et Zwinger marg.

2. But in the ears, the passageway is slanting and narrow. And the brain, in proximity to it, presses on them. When people suffer from this malady, matter is secreted for the most part and [the ear] through time malodorous pus is separated and flows from the dense stream. Thus, fluxes outside (the body) are clear to the eye and are not at all life threatening.

XIV

1. If the flow is behind and the arriving phlegm goes by way of the palate to the belly, the bellies of these people flow indeed, but they are not ill. But if the phlegm remains below, there are 'twisters' [the affections are chronic]. In other cases (where it goes) by way of the palate to the throat, if there is considerable flux over a considerable time, consumptive maladies occur. For the lungs are saturated with phlegm and pus arises. This eats the lungs and the sufferers do not readily survive. The judgment of the doctor, even if he is good and even if he is clever, in many cases fails to grasp the cause.

2. Another malady resulting from downward flux is by the vessels to the spinal fluid; there the spinal fluid rushes to the sacrum, carrying the streaming, and deposits it in the sockets of the hip joints. And if it causes consumption [in the hip joints], so the person actually wastes away, just like that, and he does not want to survive. For soon it causes trouble in the bone forming the joint; both feet and both thighs follow and they always are lost in the end even if they are attended for a long time: he (*sc.* the sufferer) loses strength and dies in this way. That is the end of my discourse on fluxes from the head.

XV

1. And other affections of the brain, cases of delirium and of madness, and all are dangerous, and the brain suffers [and the other glands]. For it (*sc.* the brain) has real tension and there is a further constriction there back from the body.

XVI

1. ἀλλὰ καὶ ἀδένες ἐν τοῖσι στήθεσι μαζοὶ καλέονται, καὶ δὴ αἰείρονται γάλα ποιέουσι· οἷς δὲ οὐ ποιέουσι γάλα, <οὐ>· ποιέουσι μὲν αἱ γυναῖκες, οἱ δὲ ἄνδρες οὐ ποιέουσι. τῇσι μὲν γυναιξὶν ἀραιή τε ἡ φύσις καὶ κατὰ τῶν ἀδένων, ὥσπερ τὸ ἄλλο σῶμα, καὶ τὴν τροφήν, ἦντινα ἔλκουσιν ἐπὶ σφέας, ἀλλοιοῦσιν ἐς τὸ γάλα· καὶ ἀπὸ τῆς μήτρης παραγίνεται 5 ἐπὶ τοὺς μαζοὺς ἐς τὴν μετὰ τὸν τόκον τῷ παιδίῳ τροφήν, ἦν τινα ἀποπιέζει, εἰ ὑπερβάλλει, τὸ ἐπίπλοον ἐς τὰ ἄνω, στενοχωρεόμενον ὑπὸ τοῦ ἐμβρύου.

2. τοῖσι δὲ ἄρσενι καὶ ἡ στενοχωρή καὶ ἡ πυκνότης τοῦ σώματος μέγα συμβάλλεται μὴ εἶναι μεγάλας τὰς ἀδένας· τὸ γὰρ ἄρσεν ναστόν ἐστι 10 καὶ οἷον εἶμα πυκνὸν καὶ ὀρέοντι καὶ ἐπαφωμένῳ· τὸ δὲ θήλυ ἀραιὸν καὶ χαῦνον καὶ οἷον εἴριον ὀρέοντι καὶ ἐπαφωμένῳ· ὥστε τὴν ὑγρασίην οὐ μεθίησι τὸ ἀραιὸν καὶ μαλακόν· τὸ δὲ ἄρσεν οὐκ ἂν τι προσδέξαιτο, πυκνὸν τε ἐὼν καὶ ἀστεργές, καὶ ὁ πόνος κρατύνει αὐτοῦ τὸ σῶμα, ὥστε οὐκ ἔχει δι' οὗ λήψεται τι τῶν περισσῶν. οὕτως ἀναγκάζει ὁδε 15 ὁ λόγος καὶ στήθεα καὶ μαζοὺς καὶ τὸ ἄλλο σῶμα τῇσι γυναιξὶ χαῦνα καὶ μαλακὰ εἶναι καὶ διὰ τὴν ἀργίην καὶ διὰ τὰ προειρημένα· τοῖσι δὲ ἀνδράσι τὰ ἐναντία.

XVII

1. ποιέουσι καὶ μαζοὶ φύματα, φλεγμονάς, τὸ γάλα ἀποσῆποντες· ἀγα- θὰ δὲ ἔχουσι τοῖσιν ἔμπροσθεν ὅμοια· ἀποστερίζουσι τὴν πλεονεξίην 20 τοῦ ἄλλου σώματος. μαρτύριον τῇσι γυναιξὶν ἦσιν ἀφαιρεῖται νοῦσος ἢ ἄλλη τις συμφορὰ μαζού· καὶ ἡ φωνὴ θρασεῖα, καὶ ὑγρὰ ἐς στόμα- χον, καὶ πτυελίζουσι, καὶ τὴν κεφαλὴν ἀλγέουσι, καὶ ἀπὸ τῶνδε νοσέ- ουσιν· ἰὼν γὰρ ἀπὸ τῆς μήτρης καὶ ἐπιρρέον τὸ γάλα, ὥσπερ μεθίετο καὶ ἔμπροσθεν ἐς τὰ ἄνω τεύχεα, τὰ οἰκεία οὐκ ἔχον τεύχεα, συντυγχά- 25 νει τοῖσι κυρίοις τοῦ σώματος, καρδίῃ, πλεῦμονι, καὶ ἀποπνίγονται.

1 δὴ αἰείρονται Zwinger marg.: διείρονται V: διαίρονται Littré 2 οἷς V: τοῖσι Ermerins | οὐ om. V: add. Littré 3 καὶ κατὰ V: κατὰ Littré: κάρτα Zwinger marg. 9–10 μέγα συμβάλλεται Zwinger marg.: μετασυμβάλλεται V 11 et 12 ἐπαφωμένῳ edd.: ἐπαφομένῳ V 12 οἷον εἴριον Littré: οἰονεῖριον V 13 ἀραιὸν edd.: ἀρεὸν V | τι Ermerins: τὸ V 15–16 ὁδε ὁ edd.: ὁδε V 21–22 νοῦσος ἢ ἄλλη τις συμφορὰ V: νοῦσος ἢ ἄλλη τινὶ συμφορῇ edd. 22 μαζοὺς Craik: μαζός V | θρασεῖα V: τραχεῖα Cornarius, Zwinger marg. 24 μήτρης Zwinger: μητρὸς V | μεθίετο Joly: μετίετο Ermerins: μεθίη V: μεθίει Littré 25 ἔχον Littré: ἔχων V

XVI

1. The glands in the chest are called breasts, and they swell in those producing milk, but not in those not. Women produce milk, men do not. Women's nature is fine with regard also to the glands, like the rest of the body; and they change the food which they draw into themselves into milk. It goes from the womb to the breasts for the child after birth as nourishment, which the omentum squeezes out to parts above it, if it has an excess, cramped by the foetus.

2. But in males both the cramped space and the denseness of the body greatly contribute to lack of size in the glands. For the male is firm and like dense cloth both to see and to touch, whereas the female is fine and flabby and like wool to see and to touch. And so what is fine and soft retains (lit. does not discharge) moisture. The male would not absorb (lit. receive) any, being dense and unreceptive, and exercise hardens his body so that it has no means to receive any superfluous stuff. Thus, this argument leads to the inevitable conclusion that chest, breasts and the rest of the female body are flabby and soft because of inactivity and because of what has been said before; and in the case of men, the opposite.

XVII

1. The breasts too give rise to pustules, phlegmy matter, causing the milk to rot. But they have similar benefits to those already discussed. They remove excess from the rest of the body. There is evidence in the case of women from whom illness or some other misfortune removes the breasts. The voice is bold, moistness (goes) to the throat, they salivate, and they have headaches, and from these conditions they are ill. For the milk, coming from the womb and flowing in, just as it was discharged before into the upper channels, not (any longer) having its own channels, meets with the vital parts of the body, heart, lung; and they suffocate.

COMMENTARY

I

The topic is introduced. The author tries to isolate the distinguishing features of all glands and to define their φύσις (inherent character). It is stressed that glands differ from the rest of the body in texture, in appearance and to the touch. The presentation is clear and logical, with a pragmatic stress on observation and palpation. Similes are used; this is a frequent feature in ancient anatomical exposition. There is some attempt at stylistic *variatio* in the use of synonymous vocabulary (two adjectives for ‘like’). There is direct address to the reader, albeit in a generalizing expression.

1. περὶ ... ἀδένων οὐλομελῆς ὧδε ἔχει ὅν glands as a whole, this is the situation’: the phrase περὶ ἀδένων οὐλομελῆς is repeated *verbatim* with reference to the overall topic of glands in the neck, 7 below. Ermerins aptly translates *universa glandularum natura*, ‘the universal character of glands’; Littré similarly has ‘la constitution entière des glandes’. Joly translates ‘le système des glandes’. This and the corresponding translation ‘on the lymphatic system’ well convey the sense, but at risk of imputing a full and detailed knowledge foreign to the writer. Although ancient doctors understood something of the motion of lymph and of blood, they had no true understanding of the one-way movement of lymph along lymphatic pathways or of the circulation of the blood in veins and arteries. That said, it is possible that the phrase ἀδένων οὐλομελίη had become an accepted expression for the systemic character of glandular activity, perceived as an aspect of the body’s totality and organic unity. (See Introduction I A and III A.) Although there is an inherent connection in sense with μέλη ‘limbs’—hence Calvus’ translation *per omnia membra* ‘in all the limbs’—Hippocratic usage suggests rather the organic unity of the bodily system as a whole, in contrast to its component parts. Both substantive οὐλομελίη and cognate adjective οὐλομέλης are used in the HC in anatomical contexts (*Anat.* 10 [8. 540 L.]; *Cord.* 8

[9. 86 L.]).¹ Thus, in *Nutriments*, κατὰ οὐλομελίην ‘as a whole’ is contrasted with κατὰ μέρος ‘in part’ (*Alim.* 23 [9. 106 L.]); cf. usage in one of the Demokritean letters (*Ep.* 18 [9. 382 L.]). However, μέλος and μέρος are frequently confused in textual traditions, both medical and literary, and the distinction here may be illusory.

Much debate has centred on the use of the same phrase in *Articulations*: ‘in another work there will be an account of glands as a whole, what they are and what sort of things they signify and can effect in what parts of the body’ (*Artic.* 11 [4. 108 L.]). Erotian (O 31) glosses οὐλομελείης: ὅλης φύσεως with reference to *Articulations*.² Galen’s view was that our treatise falls far short of true Hippocratic works both in language and thought (*Hippocratis de articulis liber et Galeni in eum commentarii*, 18A. 379 K.). See further discussion, Introduction II. The adverb ὥδε ‘thus’ like the demonstrative adjective ὅδε ‘this’ properly refers to what follows (as οὕτως like οὗτος properly does to what precedes). It serves as an expository, mildly didactic opening to the work. Similar sentences preface *Sacred Disease* and *Haemorrhoids* (*Morb. Sacr.* 1 [6. 352 L.]; *Haem.* 1 [6. 436 L.]) and also, closer still, *On Generation*, ἔχει δὲ οὕτω (*Genit.* 1 [7. 470 L.]).

φύσις μὲν αὐτῇσι σπογγῶδες ‘their character is spongy’: the μὲν solitarium, that is μὲν without following δέ, implies a contrast between glands and something else (*sc.* the rest of the body); μὲν in the ensuing phrase, ἀραιαὶ μὲν καὶ πίονες ‘fine and fatty’, has the same effect. V’s masculine pronoun αὐτέοισι is emended to give the feminine form, in line with the adjective ἀραιαί (clearly intended by V’s ἀρεαί), with ἡ ἀδήν at the end of 1 and with ἐς αὐτάς in 2. In *Articulations*, ἀδήν is masculine gender (*Artic.* 11 [4. 106, 108 L.]), while in *Glands* the ms tradition vacillates between masculine and (more frequently) feminine. (See Introduction I A.) Editors standardise, Ermerins to masculine and others, from Zwinger onwards, to feminine throughout.³ Pollux states that *epiplous* ‘omentum’ might be masculine or neuter; but in this case perhaps it is neuter in the different form, *epiploon* (Pollux 2. 4. 224). The word φύσις ‘character’, ‘nature’ is strongly indicative of the author’s intent. Similarly, *Mochlicon* begins ὁστέων φύσις (*Mochl.* 1 [4. 340 L.]) and *Nature of Woman* too is programmatic: περὶ δὲ γυναικείης φύσιος καὶ νοσημάτων τάδε λέγω

¹ See Craik, 2006, 150.

² Nachmanson, 1917, 387.

³ See also Joly 105, n. 6.

‘this is what I say on the nature and diseases of woman’ (*Nat. Mul.* 1 [7. 312 L.]). Other works make similar statements on the broad ‘nature’ of the body or of mankind (*Loc. Hom.* 2 [6. 278 L.]; *Nat. Hom.* repeatedly [6. 32 *sqq.* L.]; *Vict.* 1. 2, 6 [6. 468, 478 L.]).

In view of V’s reading ἀντέοισιν ἢ σπογγῶδες, we might consider the modest emendation ἀντήσιν ἢ σπογγῶδες ‘their character is above all spongy’, the main characteristic of glands being stressed at the outset in the affirmative particle ἢ (cf. *VM* 15 [1. 606 L.]);⁴ however such postponement of affirmative ἢ, usually placed at the beginning of the sentence, would give an improbable word order (see DGP 281). The neuter adjective of V, usually emended to σπογγώδης, to give agreement with φύσις, is here retained with the idiomatic sense ‘something spongy’ (for the idiom cf. καλὸν ἢ ἀλήθεια ‘truth is a fine thing’, *Pl. Lg.* 663e). Bodily tissues viewed as soft and absorbent are commonly likened to sponges: spleen, lung and breasts in *Ancient Medicine* (*VM* 22 [1. 628 L.]); lung in *On Bones* (*Oss.* 13 [9. 186 L.]). The terms ‘spongy’ and ‘soft’ are used of the tongue (*Acut. Sp.* 9 [= 6, 2. 412 L.]) and, by our author, of the spleen (*Mul.* 1. 61 [8. 122 L.]).

ἄραιαὶ μὲν καὶ πίονες ‘fine and fatty’: terms commonly applied to bodily tissue are utilised. Similar language is used of the female body below (also ἄραιή and οἶον εἶριον, 16). In the contrasting terms which are ubiquitous in early Greek scientific writing, ἄραιός is much used in the general sense ‘thin’ opposed to πυκνός ‘thick’, but here ‘fine’, ‘soft’, ‘loose’ or ‘flabby’ (in texture) is meant, as in 16.2 below. Thus, Erotian (*A* 6) discusses ἄραιά in various senses, contesting Bakcheios’ simple rendering τὰ λέπτα.⁵ The adjective πίων is commonly associated with λιπαρός to describe sweet and fatty foodstuffs which enrich or over-enrich the body (*Vict.* 2. 56 [6. 568 L.], *Aff.* 47 [6. 258 L.] etc.); the parallel association with ἐλαιηρός (*Morb.* 2. 70 [7. 106 L.]) is similar to that with ἐλαιῶδες at the end of this section. On the character of edible glands (offal) and adjectival descriptions of glands, see Introduction III A.

ἔστιν οὔτε σαρκία ἕνεκα τῷ ἄλλῳ σώματι, οὔτε ἄλλο τι ὅμοιον τῷ σώματι ‘neither fleshy parts like the rest of the body, nor anything else similar to the body’: at a loss for words to describe glands, the author seems

⁴ See Jouanna, 2003, 189, n. 3.

⁵ See Nachmanson, 1917, 273, discussion with reference to *Prorrhetic* 1, and 294–295, discussion with reference to *Epidemics* 4.

to negate any similarity with other bodily parts; however, as the word *σαρκία* is the subject of the statement at the end of the sentence *ψαφαρά καὶ φλέβας ἔχει συχνάς* ‘they are loose-textured and have numerous vessels’, they are evidently nevertheless viewed as ‘flesh’, though of a peculiar kind. V’s reading *ἔστιν ὅτε σαρκία* ‘sometimes fleshy parts’, apparently reflected in Calvus’ translation *quandoque carunculae*, may result from a mistaken scribal attempt to construe; however, οὔτε is imperatively demanded by the following οὔτε. Calvus treats *σαρκία*, translated *carunculae* ‘little bits of flesh’ (so too Ermerins) as a diminutive form but the termination may indicate an anatomical technical term (cf. ἐπισίον, ἰσχίον) rather than a true diminutive, as is σιτίον below, 9. The unusual word, here invoked to express a novel anatomical theory, is applied in clinical or pathological contexts to unusual phenomena, such as foreign elements in urine (*Aph.* 4. 76 [4. 530 L.]). Aristotle similarly struggles to describe the testicles (which are glands): οἱ δ’ ὄρχεις οὔτε ταὐτὸ σαρκὶ οὔτε πόρρω σαρκός, ‘the testicles are neither the same thing as flesh nor something beyond flesh’ (*HA* 1. 12, 493a *fin.*).

The adjective, glossed by Erotian (I 6) *ἰκέλη· ὁμοία* ‘like’, occurs three times in *Glands* (1, 9, 10) and the adverb *ἰκέλως* twice (4, 8); the synonym *ὁμοιος* is used three times also (1, 12, 17). The variation in usage is surely due to conscious choice; certainly, though the adjective is not uncommon in the HC (distribution: *Acut.*, *Artic.*, *Epid.* 1, 3, 4, 6, *Mul.* 1, *Oss.*), the adverb occurs only in *Glands*. A contrast between glands and ‘the rest of the body’ is recurrent in the work (2.1 *bis*; 2.2 *bis*; 4.1; 12.1; 16.1; 17; cf. 5.2); however, some instances may be intrusive (see on 2 below).

ψαφαρά ‘loose-textured’: the same term is used of the brain in 10 below, and of the lung in *Places in Man* (*Loc. Hom.* 14.2 [6. 304 L.]). Galen glosses *ψαφαρόν· ψαθυρόν* (*linguarum seu dictionum exoletarum Hippocratis explicatio*, 19. 156 K.): the two forms are interchangeable and *ψαθυρός* too occurs (Hsch. *ψαθυρόν· ἀσθενές, μαδερόν, ψαθυρόν*).

φλέβας ἔχει συχνάς ‘have numerous vessels’: that is, are highly vascular areas. *φλέβες* (cf. 2.2, 11, 14.2 below) is a term applied not only to blood vessels, but also to other bodily pathways, variously also *τεύχεα* ‘channels’ (5, 17), *ὄχετοί* ‘ducts’ (6), *ὁδοί*, ‘passages’ (13); cf. *πόρος* ‘passageway’ (13). The same adjective *συχνός* ‘numerous’ is applied to glands themselves (in the intestines, 9.1).

εἰ δὲ διατάμοις, αἵμορραγίῃ λάβρος ‘if you were to cut through it— (there would be) profuse haemorrhage’: the second person address is impersonal, equivalent to ‘if one were to’. Ermerins’ emendation αἵμορραγεῖ λάβρως ‘it haemorrhages profusely’ standardises the syntax, but the jerky and telegraphic expression, with ellipse of the verb ‘to be’, can stand; for a similar ellipse (also in the apodosis following a protasis with εἰ and optative) cf. νοῦσος αὐτῷ, 12.1. Such omission of words easily supplied suggests rapid writing in the form of notes.

It is evident from the end of the section that the supposed content of glands in general is not, or not only, blood; ‘haemorrhage’ seems here to be used of eruption of fluid contents. It may be, however, that the author is thinking of the particular examples of spleen and liver (not explicitly mentioned but probably implied in τὰ αἵματώδεα χωρία, 3). The verb ‘cut through’ is regularly used in surgical contexts. In the allusive passage of *On The Art*, discussed Introduction II, there is a very similar description of bodily θαλάμιας ‘recesses’, containing *ichor* (cf. 8 below) which comes out in great quantity ‘if they are opened up’ (*Art.* 10 [6. 16, 18 L.]).

τὸ εἶδος λευκαὶ καὶ οἶον φλέγμα ‘in appearance (they are) white and like phlegm’: the asyndetic transition is abrupt and the ellipse of the verb ‘to be’ reinforces the impression of abbreviated note form. The adjective λευκαί (feminine plural, *sc.* ἀδένες ‘glands’) is unnecessarily altered by some editors to feminine singular (with αἵμορραγίῃ) or to neuter (with εἶδος). Phlegm is regularly envisaged as white in colour.

ἐπαφωμένῳ δὲ οἶον εἶρια· κῆν ἐργάσῃ ... ἐπὶ πολὺ βύησαμενος ‘to the touch (they are) like wool. And if you work it ... using a lot of force’: similarly, the spleen is fine and sponge-like and, if touched, ‘soft like down’ (*Mul.* 1. 61 [8. 122 L.]). See Introduction II on common authorship. And for the content in general, cf. 16 below. As above, the second person address is impersonal, equivalent to ‘if one were to’ rather than personal, directed at a pupil cutting up specimens or observing surgery. ἐργάσῃ is second person singular, aorist subjunctive middle from ἐργάζομαι, while Ermerins’ ὀργάσῃς (further from ἐργάσῃ, the meaningless reading of V) would be second person singular, aorist subjunctive active from ὀργάζω. Both verbs have the sense ‘work’, as a transitive verb: ‘knead’ or ‘handle’ (an object or a material, such as metal or clay). βύησαμενος lit. ‘having forced’, aorist participle from the verb βιάω, epic form (LSJ, *s.v.*) of the synonymous βιάζω, more common in the HC. See on 5 below. The verb is

used, as here, of the practitioner applying pressure in *Diseases of Women* (*Mul.* 1. 70 [8. 148 L.]). On the peculiar form of the double condition, εἰ ... διατάμοις followed by ἤν ἐργάσῃ (εἰ with optative followed by ἤν with subjunctive), see Introduction I B and on 12 below.

ὕγρον ἀφίησιν ἐλαιῶδες ‘discharges an oily moistness’: once again, the elusive quality of glands is apparent in the choice of words; they are ‘oily’, ‘oil-like’.

καὶ αὐτὸ θρύπτεται πολλά καὶ ἐξαπόλλυται ‘and that is for the most part broken up and dissipated’: V’s αὐτό (*sc.* the oily stuff) is changed to αὐτή (*sc.* the gland) by most editors; but this is surely not intended. Ermerins deletes πολλά on the grounds that it has crept in through repetition of letters from the following verb; but the qualifying expression is apt, though usage with the article, either τὰ πολλά or τὸ πολύ, is more common (LSJ *s.v.* πολὺς IIIa, adverbial uses). There is a poetic tinge in both verbs. The verb θρύπτεσθαι is colourful, elsewhere in the HC used only of fish ‘battered’ by swimming in heavy seas (*Vict.* 2. 48 [6. 548 L.]); the notion of bodily parts giving up, here expressed by the verb ἐξαπόλλυται, as in *Breaths* of the collapse of cognition through alteration in the blood (*Flat.* 14 [6. 112 L.]) is more commonly expressed by διαφθείρεσθαι.⁶

II

It is stated that glands are peculiar in that they are (relatively) independent in their ailments: whereas trouble in the glands (a rare eventuality) affects the body as a whole, the glands are not affected by general trouble in the body. There is much stress (four times in this short chapter, then throughout) on glands versus ‘the rest of the body’. Malfunction of the glands is briefly explained in terms of an influx of noxious moisture, leading to pressure, swelling and fever. That glandular function is generally unproblematical is stated also in 9 below.

The style is somewhat uneven, with rhetorical sentences amid more functional expression. There is some attempt at stylistic *variatio* (the same pathology being described in different words) alongside medical

⁶ See Craik, 2006, 53.

technical vocabulary (for such conditions as pustules and scrofula). The exposition remains clear, with stress on cause and effect. A succinct outline explanation in the first section is repeated, slightly amplified, in the second.

1. πονέουσι δὲ οὐ κάρτα, ἀλλὰ τὸ ἄλλο σῶμα, ἐπὶ πονέωσι, πονέουσι δὴ δι' ἰδίην νοῦσον 'they do not suffer very much, but when they do suffer, they make the rest of the body suffer through their own (sc. peculiar) ailment': V's text (τῷ ἄλλῳ σώματι ἐπὶ πονέουσι δὲ ἢ δι') is meaningless and obviously corrupt; it seems that some words have been lost. In the text proposed, πονέωσι provides the subjunctive required after ἐπὶ πόν and it is supposed that this was lost through haplography, while the immediately following indicative πονέουσι remained; the addition of δὴ accounts for V's ἢ (it being supposed that δὴ δι' is corrupted to become δὲ ἢ δι'). Ermerins' suggested emendation τῷ ἄλλῳ σώματι ἐπὶ πονέωσι τὴν ἰδίην νοῦσον μεταδιδόασι 'they share with the rest of the body their own ailment when they suffer' (supposing that V's δὲ ἢ δι' arose from ἰδίην, that τὴν was lost and that likewise the verb μεταδιδόασι *excidit* 'dropped out') gives similar sense to that proposed above, but requires more drastic change.

The usage of the verb πονέω in *Glands* is idiosyncratic: the sense of the active form fluctuates between intransitive 'suffer' and transitive 'make suffer'; the middle form πονέεσθαι has the sense 'suffer'. Fluctuation of sense within a single sentence may have given rise to the corruption evident here. According to LSJ, middle forms are invariably used in early Greek; but after Homer the active form prevails. Regular usage in the HC is of the active form, used intransitively with the patient or the affected part as subject in the sense 'suffer', 'feel pain' (though there are exceptions, for example *Loc. Hom.* 40 [6. 334 L.], transitive usage with the doctor as subject 'cause to suffer', cf. *Morb.* 2. 74 [7. 112 L.], transitive usage with the disease as subject and also *Mul.* 1. 32 [8. 76 L.]). See also 4.2 (middle, intransitive or passive, transitive); 7.2 and 7.3 (active, transitive); 12.2 (ambiguous: active, transitive or intransitive); 14.2 (ambiguous: active, transitive or intransitive); 15 (active, intransitive). The same idiosyncratic usage can be seen in the group of texts *Generation-Nature of the Child, Diseases 4, Diseases of Women* (for example, *Mul.* 1. 2, 4, 34, 37, 61, 72 [8. 18, 26, 80, 90, 124, 152], similarly *Mul.* 2. 174 [8. 356 L.]); also sporadically in a few other works. These include *Prognostic* and *Prorrhetic* 2, suspected on grounds of similar style and common content, to have common authorship (*Prog.* 24 [2. 184 L.]; *Prorrh.* 2. 9 [9. 22 L.]), also

Nature of Man (*Nat. Hom.* 10 and 14 [6. 56 and 66 L.]) The adverb *κάρτα* and the conjunction *ἐπήν* used here, are markedly preferred in the group of texts *Nature of the Child*, *Diseases 4*, *Diseases of Women* to the synonymous *σφόδρα* and *ὅταν*.⁷ For the implications of such stylistic features for authorship, see Introduction II.

παῦρα δὲ καὶ τῷ σώματι συμπονέουσιν ‘but they in turn suffer little with the (rest of the) body’: the mannered parallel adverbial phrases with different expression, negative *οὐ κάρτα* followed by positive *παῦρα*, are emphasized by the unusual particle collocation *δὲ καὶ* (DGP 305, equivalent to *αὖ* ‘again’, ‘in turn’). The compound verb *συμπονέειν* (*variatio* after *πονέειν*) is *hapax* in the HC but the sense is perfectly clear. Elsewhere in the HC *παῦρος* is used as an adjective applied to the few patients to survive a particular illness (especially in *Internal Affections*: 8 of 11 Hippocratic occurrences); in general usage it is a poetic synonym for *ὀλίγος* and rarely appears in prose.

αἱ νοῦσοι· φύματα γίνονται, καὶ χοιράδες ἀναπηδῶσι, καὶ πῦρ ἔχει τὸ σῶμα ‘their ailments: pustules arise’ (that is, ‘their ailments manifest themselves as pustules’), ‘scrofulous swellings erupt, and fever grips the body’: Ermerins deletes *τὸ σῶμα* regarding it as otiose. Glandular diseases are seen as involving three conditions, concurrent or sequential; in the following section the same symptoms are described in different and more general words (fever, swelling, inflammation). Fever is commonly associated with glandular swelling in ancient aphoristic lore: see *Epid.* 2. 3. 5 [5. 108 L.]; *Aph.* 4. 55 [4. 522 L.]; *Coac.* 1. 73 [5. 600 L.] and compare Diokles fr. 56 b, c with van der Eijk 2. 124–125. The substantive *πῦρ* for the usual *πυρετός* ‘fever’ shows a stylistic preference seen in *Diseases 4* and *Diseases of Women* (*Morb.* 4. 49 [7. 578 L.]; *Mul.* 1. 2 [8. 16 L.]).

The ensuing exposition makes it clear that *φύματα*—variously ‘pustules’, ‘abscesses’, ‘cysts’, ‘tubercles’, ‘tumours’ or ‘growths’, ‘lesions’ such as boils, all etymologically connected with suppuration—may present anywhere in the body, including armpit, 8; breast, 17. Thus, in one passage of *Epidemics*, where the gland (*ἀδήν*) at the ear is affected, there is swelling and fever, but (unexpected) absence of suppuration (*Epid.* 4. 42 [5. 184 L.]) and in another the glands (*βουβῶνες*) of genitals and neck

⁷ See Grensemann, 1982, 150 (table) and cf. the careful analysis of Joly, 1977.

ἐφυσματοῦντο ‘became swollen’ (*Epid.* 5. 59 [5. 240 L.]). In *Nature of the Child*, a pustule at the groin (βουβών) is explained as due to pent-up menstrual blood (*Nat. Pue.* 15 [7. 496 L.]); here there is explicit cross-reference to another account (*Mul.* 1. 2 [8. 20 L.]). Celsus uses the term *struma* in a similar sense (Celsus 5. 27. 7). The relative incidence of φύματα ‘pustules’ and χοιράδες ‘scrofulous swellings’ in the HC is 89 to 5. That the latter condition (which is always external) is viewed as a special type of the former (which may be internal or external) can be seen in the aphoristic expression ‘scrofulous ulcers and other pustules’ (*Aph.* 3. 26 [4. 498 L.]; see also *Coac.* 4. 502 [5. 700 L.] and *Prorrh.* 2. 11 [9. 32 L.]).

Scrofula is a term once commonly applied to the characteristic uneven ridgy swelling which is typical of tubercular conditions. The term has become obsolete—with the dwindling incidence of tuberculosis—and there seems to be no modern equivalent or replacement. Scrofulous conditions are painless but insidious and hard to treat, symptomatic of the presence and advance of systemic disease. Here the verb ἀναπηδᾶν for ‘erupt’, lit. ‘jump up’ and so used in *Epidemics* of a patient’s sudden actions (*Epid.* 7. 11, 25 [5. 384, 396 L.]) is arresting. Scrofula is not a sudden disease. The reference of the metaphor is not therefore to its onset. It may rather represent its appearance and typical presentation in little ridges of uneven height. The name seems originally to have come from the resemblance of scrofular outbreaks to the outcrops of craggy mountains. Hesychios glosses χοιράδες· αἱ ἐγκείμεναι πέτραι καὶ πάθος τι δεινόν ‘overhanging rocks and a dreadful disease’. It was demonstrated by the learned doctor Triller—with strictures on Hesychios’ defective medical knowledge—that the term ‘glands’ should be restored in the second part of the gloss, making it specific not general, and that the first word should be emended to ὠγκωμέναι (or ὠγκούμεναι). Thus, instead of αἱ ἐγκείμεναι πέτραι καὶ πάθος τι δεινόν ‘overhanging rocks and a dreadful disease’ we have ὠγκούμεναι πέτραι καὶ πάθος τι ἀδένων ‘looming rocks and a disease of the glands.’⁸ Triller similarly emends the Galenic definition (*Definitiones Medicae*, 19. 443 K.) χοιράς ἐστι σὰρξ ξηρὰ καὶ δύσλυτος ‘scrofula is flesh, dry and hard to dissipate’, arguing that ξηρὰ ‘dry’ be replaced by σκληρὰ ‘hard’.

⁸ Triller, 1742, 134–137.

ἐπὶ ὑγρασίης πληρωθέωσι τῆς ἀπὸ τοῦ ἄλλου σώματος ἐπιρρεούσης ἐς αὐτάς ‘when they are filled with moisture from the rest of the body flowing into them’: the conjunction ἐπὶ ‘when’ is favoured (as above). Ermerins’ emendation ἀπό (for V ἐπί) greatly improves the sense, and is taken up by ἐκ τοῦ ἄλλου σώματος below. The key concepts of bodily moisture (here ὑγρασίη, somewhat more abstract in nuance than the synonymous ὑγρότης or τὸ ὑγρόν) and bodily flux (emphasised by the immediate repetition ἐπιρρεῖ) are introduced. The verb πληρόω is regularly used where such ‘filling up’ or saturation with moisture is postulated: body with phlegm in winter (*Nat. Hom.* 7. [6. 46 L.]); chest with pus (*Morb.* 3. 16 [7. 152 L.]); parts such as ear with mucus (*Artic.* 40 [4. 174 L.]); cf. also the compound ἀποπληρόομαι used of wool, absorbing more moisture than cloth, in the same author’s analogy with female flesh (*Mul.* 1. 1 [8. 12 L.]). The corollary or opposite concept is that of ‘emptying’, becoming less full, and is seen in the related context of the ‘rest of the body’, depleted vis à vis the breasts as a consequence of lactation (*Mul.* 1. 73 [7. 154 L.]).

The concluding pronoun, with reference to glands, is tautologous and inelegant. However, repeated use of the pronoun αὐτός in oblique cases (seen also in 2.2 below, δι’ αὐτῶν and ἐς αὐτάς) is a characteristic feature of early Greek prose.

2. ἐπιρρεῖ δὲ ἐκ τοῦ ἄλλου σώματος ‘this flows in from the rest of the body’: the repetition of the verb ‘flow’ and the phrase ‘the rest of the body’ serves to stress important elements in the author’s theories.

διὰ τῶν φλεβῶν, αἱ δι’ αὐτῶν τέτανται πολλαὶ καὶ κοῖλαι ‘through the vessels, which are hollow and extend through the glands in great numbers’: the author carefully builds on his earlier statement that glands have ‘numerous vessels’, now said to extend throughout them. The expression δι’ αὐτῶν (lit. ‘through them’) translated ‘through the glands’ is slightly awkward as there is no clear antecedent. The head too is said to be ‘hollow’ (and so receptive to moisture), 7 below; and the situation of glands in ‘hollows’ or cavities is repeatedly stressed. Interconnection by bodily pathways is an important aspect of the glandular theories propounded. Thus, the breasts need links to receive milk from the digestive system, 16 below; cf. (in the context of a similarly slanted explanation of lactation) the vaguely envisaged φλέβια ταῦτά τε καὶ παραπλήσια ἄλλα ‘these little vessels and others of a similar sort’, *Nat. Pue.* 21 [7. 512 L.] and also the similar physiology of *Mul.* 1. 73 [8. 154 L.] cited above. The conception

in the Aristotelian *Problemata* is similar: moisture is said to flow from the head via the φλέβες ‘vessels’ in κατάρροι ‘downward fluxes’ through many πόροι ‘ducts’ (Arist. *Probl.* 2. 17, 867b).

ὥστε ἀκολουθεῖν τὸ ὑγρὸν ὃ τι ἂν ἔλκωσιν εὐπετέως ἐς αὐτάς ‘with the result that whatever moistness they (= the vessels) draw proceeds readily into them (= the glands)’: the key concept of one bodily part ‘drawing’ (cf. 3, 6, 8, 12 and 16 below) moisture from another is introduced. The translation is slightly amplified for clarity: the vessels draw and the glands receive; once again the pronoun is slightly awkward. The indefinite construction indicates that this is a repeated occurrence. The adverb εὐπετέως ‘readily’ is unusual, but the incidence in the HC is in accord with the general grouping found for *On Glands*; for instance twice in a section of *Diseases of Women* (*Mul.* 1. 70 [8. 148 L.]); three times in *Prognostic*; five times in *Prorrhetic* 2.

κῆν πολὺ ἔη καὶ νοσῶδες ἢ ῥοή ‘and if the stream is copious and diseased’: the sense may be, rather, ‘copious *or* diseased’; see 7 and 12 below for distinctions made between copious matter (probably to be seen as phlegm) and peccant matter (probably bile). For the neuter adjectives following the feminine substantive, see on 1 above.

συντείνουσιν ‘become taut’: the same verb is used intransitively in 7.3 in relation to the neck, a particular case of the general pathology here outlined. The sense is evidently one of constriction, tenseness and tautness; and the transitive usage required with the reading τὸ ἄλλο σῶμα (here deleted) as object would be very unusual. (LSJ offer the translation ‘lead to’ for this passage, surely wrongly, though the verb does have that sense elsewhere in the HC.) Usage in a passage of the Aristotelian *Problemata* is parallel: when sweat in exercise is checked, αἱ φλέβες διατείνονται τοῦ ὑγροῦ οὐ δυναμένου ἐξίεναι ‘the vessels become taut, as moisture cannot escape’ (Arist. *Probl.* 2. 24, 868b; cf. 1. 24, 862a). The adjective σύντονος, -ον is used of ‘clenching’ pain (πόνος or ἄλγημα) in several passages of *Koan Prognoses* and *Prorrhetic* 1 and the substantive συντονία is used of a condition where heat coursing through the vessels, indicated by a nose-bleed, leads to mental disturbance or ‘spasm’ (*Acut. Sp.* 29 [= 10, 2. 450 L.]). See further on 12 below for a similar effect on the brain. The symptom may be described as ‘rigor’, a modern term for the stiffness or shivering, often accompanied by fever, which can signal the onset of some acute disease, such as internal inflammation. A similar pathology is

outlined for *phthisis* ‘consumption’ in the third of three types delineated in *Internal Affections*: the vessels ὠχραὶ διατέτανται ‘become pale and constricted’ (though some, especially in the armpits—perhaps an allusive reference to the glands there—are red); there is intermittent ῥῆγος καὶ πυρετός ‘shivering and fever’ (*Int.* 12 [7. 194 L.]).

οὕτω πυρετὸς ἐξάπτεται, καὶ αἰείρονται καὶ φλογιῶσιν αἱ ἀδένες ‘in this way, fever is kindled and the glands become swollen and inflamed’: the verb ἐξάπτεσθαι occurs elsewhere in the HC only in *Regimen in Acute Diseases*, there too of fever (*Acut. Sp.* 13 [= 7, 2. 420 L.]). The explanatory οὕτω ‘thus’ is recurrent in the author’s exegetic style. Glandular swelling, usually bad, can be natural and good, as in the case of the breasts, 16 below. V’s φλογῶσιν, emended to φλογιῶσιν by Ermerins, might be retained if we accept the existence of a by form φλογάω alongside the regular φλογιάω seen in *Diseases* 2 (*Morb.* 2. 66 [7. 100 L.]). Such variation is not without parallel: both forms φλοιδέω and φλοιδι-άω ‘seethe’ are accepted by LSJ.

III

The location of glands in the body is described in general terms. The single defining feature is the presence of moisture and two main types of situation, hollows (cavities) and joints, are specified; as an afterthought allowance is made for further places, not cavities or joints, where there may be moisture and ‘bloody’ places are added. The glands draw and absorb moisture from the rest of the body and so contribute to the maintenance of bodily equilibrium. The author aims at a comprehensive categorisation, systematically and logically expressed with careful use of antithesis. But the distinction apparently envisaged between cavities and joints, the first subject to moisture arising from flux (*sc.* flux from the head) and the second to moisture arising from exercise (*sc.* including sweat), is somewhat artificial, especially as some joints (sacrum and hips) are subsequently regarded as the destination of flux.

1. ὕπειςιν ἐν τῷ σώματι πλείους ἢ μέζους ‘are present in the body in greater number or greater size’: the ὕπ- prefix may imply an inherent, underlying presence, as in the more common verb ὑπάσχειν, or perhaps there is a suggestion of something strange, mysterious and hard to understand (LSJ *s.v.* ὑπό F. in composition III ‘underhand’, ‘secret’); a modern

writer refers to the ‘enigmatic tube-like ducts carrying off the secretions of such organs as the liver’.⁹ The question of relative size arises with greater precision in 5 and 6 below. The present context, with its vague formulation, may reflect different findings in different animal species observed. Comprehensive expression in alternatives (as 3, 8, 11 below) is a regular feature of the author’s exposition. See Introduction I B and II.

Calvus has recourse to imprecise paraphrase at this point: *plurima siquidem glandia glandulaeve sunt in corpore, sed magis et maiores in cavis locis quam in articulis* ‘although there are very many glands or little glands in the body, they exist to a greater extent and in greater number in hollow places than in joints’.

ἐν τοῖς κοίλοισιν αὐτοῦ καὶ ἐν τοῖσιν ἄρθροισι ‘in its cavities and in its joints’: through assonantal and balanced expression the idea of parallelism between cavities and joints, placed on either side of the pronoun αὐτοῦ, is reinforced. The cavities are specified in 4 below as ears, neck, armpits, groin and pubic area; in 7 below the head too is said to be hollow. The peritoneal cavity is discussed in 5. The expression ‘cavities and joints’ is almost a hendiadys as there is an overlap between the two categories: ball-and-socket joints, such as the shoulder and the hip, can readily be said to have hollows (although hinge joints, such as elbow and knee, can less readily be so described); armpits and groin can be regarded as (part of) joints, although ear and neck are not obviously so. Cavities and joints can be seen as corollary, effectively one concave and the other convex. Thus, the author of *Articulations* uses the expressions ‘the hollow of the shoulderblade’, ‘the hollow of the armpit’ and in the context of dislocated shoulder or knee instructs that wool be used as ἐκπλήρωμα τοῦ κοίλου ‘a plug for the hollow place’ (*Artic.* 1, 3, 9 [4. 80, 84, 100 L.]). Similarly, a modern writer describes the location of glands as ‘under the *articulation* of the os humeri with the scapula, in the *hollow* of the axilla’.¹⁰

The term κοιλία, ubiquitous in both medical and general parlance for the upper or lower body cavity (chest or abdomen), is cognate; and the term κενεών for the hollow between ribs and hip (side or flank) used from Homer onwards and linked in *Articulations* with the groin (*Artic.* 41 [4. 180 L.]) carries a similar literal sense, ‘empty place’; cf. also νηδύς in *Art* (*Art.* 10 [6. 16, 18 L.]). Aristotle views the axilla as κοινὸν μέρος

⁹ Porter, 1997, 564.

¹⁰ Encyclopaedia Britannica, 1st edn (Edinburgh, 1771), s.v. Anatomy VI.

‘part in common’ to arm and shoulder; the throat (σφαγή) as similarly common to neck and chest; and the groin to thigh and abdomen (HA 1. 14, 493b).

ὅπου ἐν τοῖσιν ἄλλοισιν ὑγρηδὼν ‘wherever in other (parts) (there is) moisture’: here there is a slight variation on the regular recurrent expression τὸ ἄλλο σῶμα ‘the rest of the body’. There is ellipsis of the verb ‘to be’ and different terms for moisture are used almost interchangeably (2.1, 3, 4, 5.2, 6, 7.2, 8, 9, 10, 16.2). See Introduction I B. V’s ὑγρηδὼν would be possible as an adverbial formation but does not give good sense. The breasts, included 16 and 17 below, are perhaps the additional category here implied.

κατὰ τὰ αἱματώδεα χωρία ‘in the region of places which are full of blood’: κατὰ ‘around’ (LSJ ‘on’, ‘over’ or ‘throughout’ a space) is less precise than ἐν ‘in’. The term χωρίον¹¹ is cognate with and suggestive of the terms εὐρυχωρίη ‘wide place’ and στενοχωρίη ‘narrow place’, important in the author’s theories (10 and 16.2). The spleen, not here included, is generally described as ‘bloody’ and as attracting moisture; the liver too is frequently said to be ‘bloody’. See on 5 below. The kidneys, also ‘bloody’, are said to have glands, 6 below.

αἱ μὲν ὡς τὸ ἐπιρρέον ἄνωθεν ἐς τὰ κοῖλα ἐπιδεχόμεναι ἐπὶ σφέας ἔλκουσιν, αἱ δὲ ὥστε τὴν αὖτις γινομένην ὑπὸ τῶν πόνων ὑγρασίην ἐκδεχόμεναι ἐν τοῖσιν ἄρθροισιν τὴν πληθύν, ἦντινα μεθίησι τὰ ἄρθρα ‘some, receiving what flows in from above into the cavities, draw (that) into themselves while others receiving in the joints moisture resulting from exertions, the superabundance which the joints discharge, (draw that into themselves)’: with the small emendation from V’s ἔλκωσιν subjunctive to ἔλκουσιν indicative, there is no need for Littré’s more substantial emendation of ἐν τοῖσιν ἄρθροισιν to ἐξαρύωσι. The subjunctive could have arisen from misunderstanding of the conjunction ὡς (not ‘in order that’ but ‘inasmuch as’, in sense like the following ὥστε which is a substitution for causal ἅτε, in a usage found throughout *Places in Man*)¹² and so the parallel subjunctive supplied by Littré is unnecessary. Construe: ‘some, receiving one thing, draw (sc. that) to themselves; some,

¹¹ Cf. Ioannidi, 1983, 328.

¹² See Craik, 1998, 20.

receiving another thing, draw that'. The verb 'draw', placed in the middle, serves both participial expressions. There is parallelism, expressed in mannered fashion with slight *variatio* in the two compound verbs ἐπιδεχόμεναι and ἐκδεχόμεναι, between two types of moisture drawn by two categories of glands, moisture from flux ('flowing from above') and moisture from exertions ('which the joints discharge'); αὖτις (αὖθις) 'in turn', 'at times' emphasises the notion of interchange and reciprocity. But the sharp differentiation is artificial.¹³

Later (16) πόνος is clearly 'exercise' which hardens the male body and this seems to be the sense here also, with 'moisture' referring to sweat. An alternative sense of πόνος is 'pain' or 'trouble'; both senses are given by Erotian at Π 27. With the alternative sense, the contrast would be between regular moisture from flux and irregular moisture from disease—but this is inappropriate as flux is seen as the cause of disease. The theory is markedly similar to that of *Regimen* (especially *Vict.* 2. 66 [6. 584 L.]).

οὕτω πλάδος οὐκ ἔνι ἐν τῷ σώματι 'in this way, there is no wetness in the body': Erotian (Π 12) glosses πλάδος at some length, ἢ οἷον ἔκχαννος καὶ ὑπόσομφος καὶ δίνυρος τοῦ σώματος διάθεσις καὶ μὴ στερεᾶ κεχηρημένη σαρκί 'the bodily condition which is loose, soggy and moist, lacking firm flesh';¹⁴ or, to paraphrase, flabby sodden stuff in the body. A similar concept is expressed by the cognate adjective πλαδαρός in *Articulations* (*Artic.* 40 [4. 174 L.]). The verb ἔνι is used for ἔνεστι (or, more strictly, the form is the preposition ἐν, of which ἔνι is a poetic form, and the verb ἐστί is understood).

εἰ γάρ τι καὶ γίνοιτο παραιντικά, οὐκ ἂν ἐπιγίνοιτο πλάδος ὀπίσω 'for even if there were some wetness at one time, there would not still be wetness later': the slight and palaeographically easy emendation of ἐπιγίνοιτο to ἔτι γίνοιτο would give more idiomatic Greek to express 'would still be'. Ermerins' deletion of πλάδος is economical but unnecessary. The adverb παραιντικά 'at one time', 'momentary' echoes αὖτις above and is here opposed to ὀπίσω 'in the future', lit. 'behind' (the future, unseen, being envisaged as behind, not before, one). The notion of some potential moisture is conceded. A similar situation, with reference to exchange and

¹³ On the verb μεθίεναι (regularly followed by the dative), see Giorgianni, 2006, 233–234.

¹⁴ See Nachmanson, 1917, 286, comment with reference to *Epidemics* 1.

future balance of fluids is expressed in similar terms in *Diseases* 4: ἀποδίδεται αὐτῇ ὅπισω ἢ ἱκμάς, ὥσπερ καὶ ἐπεδέξατο ‘moisture is returned ... just as received’ (*Morb.* 4. 39 [7. 558 L.]).¹⁵

καταναισιμοῦται γὰρ τὸ πολὺ καὶ τὸ ὀλίγον ‘much or little, it is absorbed’: both Erotian (K 45) and Galen (*linguarum seu dictionum exoletarum Hippocratis explicatio*, 19. 109 K.) gloss this term as καταναλίσκεται, cf. also Foesius in *Oeconomia*. The related compound ἀπαναισιμοῦται occurs in 9 below. Hesychios glosses ἀνασιμοῦν· δαπανᾶν, ἀναλίσκειν ‘spend’. The only other Hippocratic occurrence is as a variant in *Articulations* (*Artic.* 11 [4. 108 L.]).¹⁶ On the tendency of the author to artificially exhaustive expression see above and Introduction I B, II.

IV

Glands exist in moist parts of the body; they feed on excess bodily moisture. Glands and hairs are to be found in the same places. The argument is formulated in these terms: glands profit from bodily moisture; hairs profit from glandular moisture; bodily interdependence is served. The conclusion is confirmed by the observation that in dry parts of the body there are neither glands nor hair, and the corollary observation that various parts (listed) have both. The compression makes the argument seem circular: armpits, groin and neck suffer, therefore there are glands there; there are glands there, therefore they suffer. This suggests a tendency to select that ‘evidence’ which seems to corroborate theories already held. At the same time, important glandular areas are here correctly identified: the parotid glands lie beside the ears; the submandibular and sublingual salivary glands lie under the border of the mandible alongside the jugular (though this description may relate rather to lymph nodes that lie alongside the internal jugular vein); the axillary lymph nodes in the armpits and the inguinal lymph nodes in the groin are clearly described. There is *variatio* in the choice of synonymous terms for ‘excess’.

1. καὶ οὕτω ‘and in this way’: the author strives for logical presentation. The tone of this expository expression is developed in ὥστε ὅπου

¹⁵ Lonie, 1981, 296 describes this as ‘theory of humoral equilibrium’.

¹⁶ See Nachmanson, 1917, 385, 511; also Littré 4, 108–110, lengthy n. 21 on the corruption in the text and the required sense, ‘consumer’, ‘dépenser’.

‘it follows that wherever’ and σημείον ‘here is a proof’. The balance in the repeated ὅπου ... ἐκεῖ καὶ argument and in the ensuing μέν ... δέ construction becomes somewhat laboured and the argument ponderous.

τὴν πλεονεξίην ‘excess’: this term is repeated in 5.1, 11 and 17 and περίσσειον used just below is repeated in 16.2, while περιουσίη used in 4.2 occurs only here. Plato uses the first in opposition to ἔνδεια ‘need’ (Pl. *Ti.* 82a); in the HC it occurs in *Regimen in Acute Diseases* (*Acut. Sp.* 29 [= 10, 2. 452 L.]); the second is a regular expression, used also by Galen in relation to glandular function (*de curandi ratione per venae sectionem*, 11. 275 K.); the third is cited by some as an indication of ‘lateness’ (see Introduction I B).

κέρδος ποιεύμεναι ‘make capital’: participle stands for main verb, with the result that αἱ ἀδένες is a loose *nominativus pendens*. The metaphor, repeated in the verb ἀποκερδαίνειν, 6 below, is closely paralleled by a similarly expressed comment in *Places in Man* that dry bodily parts κερδαίνουσι ‘gain’ by flux (*Loc. Hom.* 9.4 [6. 292 L.]); cf. also the statement in *Articulations* that patients who limp in a particular situation κερδαίνουσι ‘gain advantage’ (*Artic.* 52 [4. 228 L.]).

τροφή σύντροφος ‘natural nourishment’: the adjective is not otiose but suggests something innate, apt or habitual to the recipient: the σύντροφον (to the body) is opposed in *Regimen* 2 to that which is πολέμιον ‘inimical’ (*Vict.* 2. 66 [6. 584 L.]). The idea that different parts of the body have different sources of nourishment pervades ancient physiological concepts; see 16.1 below and for example *Places in Man* (*Loc. Hom.* 4 [6. 284 L.]). This is spelt out in the short work *Nutriments*, where δύναμις τροφῆς ‘the power of nutrition’ reaches all parts of the body, specified not by anatomical location but in terms of character or composition: bone, flesh, fat etc. (*Alim.* 7 [9. 100 L.]). There is a poetic tinge here, both in the choice of adjective σύντροφος which in verse signifies close, habitual association (cf. *S. Ph.* 171, 203), and in the paradoxical juxtaposition with the cognate substantive τροφή.

ὅπου τελματώδεα ‘wherever (there are) soggy (areas)’: the analogy between earth and the body, continued below and further developed in 5, is here introduced in a word descriptive of bogs and marshes. Hesychios glosses τέλματα · τὰ πηλώδη καὶ τελευταῖα τοῦ ὕδατος ‘muddy places

and residual water'. It is unusual for a non-medical adjective to have the medical suffix -ώδης. In this case, however, it heightens the effect of the earth-body analogy.

σημεῖον ' (here is) a proof': the asyndetic and abbreviated expression lends emphasis to the claim. A significant point is introduced; similarly but more elaborately in *Diseases* 4 a 'proof' is presented to demonstrate the 'drawing' powers within the body (*Morb.* 4. 35 [7. 548 L.]). For the prevalence of such expressions in the writer, see Introduction II.

ἡ γὰρ φύσις ποιεῖ ἀδένας καὶ τρίχας. ἄμφω χρὸς τούτῳ λαμβάνουσιν 'for nature creates glands and hairs. Both take up the same requirement': 'nature' is here almost 'Nature', personified, with an implicit teleology.¹⁷ Hippocratic authors commonly postulate an association between hair and moisture; this is fully expressed in *Nature of the Child* (*Nat. Pue.* 20 [7. 508 L.]) in language parallel to that of *On Glands*, and underlies some aphoristic dicta (*Aph.* 6. 28, 29, 30 [4. 570 L.]). Similarly, in *On Flesh* hair is thought to arise from parts of the body where τὸ κολλῶδες (the 'sticky' as opposed to the 'fatty' element) predominates, such as bones and brain (*Carn.* 14 [8. 602 L.]; cf. also *Pl. Ti.* 76c). Aristotelian speculation follows similar lines: the difference between the growth of hair on the human head and that of other animals is noted (*HA* 2. 1, 498b; cf. *Probl.* 10. 62, 898a, invoking differences in nutrition); the belief that hair is longest in 'hollow' and 'moist' parts of the body and, related to this, that the hair of the head is thickest because it is situated 'over most moisture' (that is, over the brain), is expressed (*HA* 3. 10, 517b; *GA* 5. 3, 782 b); similarly, the presence of hairs is a σημεῖον 'proof' (argumentation as in our passage) that there are many πόροι 'passages' carrying moisture from the inside of the head to the outside (*Probl.* 2. 17, 867b). The general association between hair and moisture is negated in an isolated case, where hair is associated rather with the 'dry' and 'thin' (*Probl.* 4. 4, 876b). The context of speculation on the nature and origin of hair growth is most commonly that of human conception and embryology—seen most markedly in *Nature of the Child* and *On Flesh*. Similarly oriented debate is found in the Presocratics, notably Empedokles and Demokritos.¹⁸

¹⁷ On the different senses and implications of 'nature' in an anatomical context, see Craik, 2006, 145–146 and 152–153.

¹⁸ See Introduction II; also Lonie, 1981, 199–200.

αἱ μὲν ἐς τὸ ἐπιρρέον, ὥς καὶ ἔμπροσθεν εἴρηται, αἱ δὲ τρίχες τὴν ἀπὸ τῶν ἀδένων ἐπικαιρίην ἔχουσαι ‘first, (glands) in response to matter flowing in, as previously stated; second, hairs ... with opportune input from the glands’: the stylistic tendency to reiterate is characteristic of the author and is clearly seen throughout the works which can be attributed to him. Thus, the phrase ὥς ἔμπροσθεν εἴρηται occurs near the beginning of *Diseases of Women* (*Mul.* 1. 2 [8. 20 L.]) and the similar κατὰ τὸν ἔμπροσθεν λόγον is used three times in a short section (*Mul.* 2. 133 [8. 294, 296, 302 L.]). Statements of this sort are ubiquitous in *Nature of the Child* and associated works; one example, chosen at random, is ὥσπερ μοι εἴρηται ὀλίγῳ πρότερον (*Nat. Pue.* 20 [7. 508 L.]). See Introduction I B and II. Although the substantive ἐπικαίριη is hapax in the HC, there are 30 occurrences of the adjective ἐπικαίριος, half of them in the group *Articulations-Fractures-Mochlicon*; see on 7 below. The term καιρός expresses a medical bromide.¹⁹

ἀναλεγόμεναι τό τε περισσὸν καὶ ἐκβρασσόμενον ἐπὶ τὰς ἐσχατίας ‘taking up what is superfluous and gushing out to distant parts’: superfluous moisture in the glands is described in the same terms as superfluous bodily residues from food. The verb ἐκβράσσειν is glossed by Galen as ἐκβάλλειν (*linguarum seu dictionum exoletarum Hippocratis explicatio*, 19. 95 K.); Foësius in *Oeconomia* explains *cum impetu eiicitur* ‘is forcibly ejected’. It is used (active) of a patient emitting a red flux (*Mul.* 2. 113 [8. 242 L.]) and (middle) of a patient throwing up clots of blood (*Int.* 1 [7. 166 L.]). The related compound ἀποβράσsetai (middle) describes the emission of sperm, supposedly in more than one phase when twins are conceived (*Morb.* 4. 31 [7. 540 L.]). The same phrase ‘to distant parts’ (that is, ‘to the surface’) is used again in 10 below; also (the only other Hippocratic occurrence) in *Fractures* of ἰχῶρες ‘noxious matter’ coming from a wound (*Fract.* 5 [3. 434 L.]). The metaphor of land as analogous to the body, prominent elsewhere in the work, is here implicit.

2. ὅπου δὲ αὔον ἐὼν τὸ σῶμα ‘where the body is dry’: participle ‘being’ stands for indicative ‘is’, as elsewhere in the work. Here, the sound seems unattractive, with hiatus and an awkward collocation of vowels. Erotian (A 13) glosses αὐασμόν· ξηρασμόν. καὶ αὔον λέγεται τὸ ξηρόν with reference to *Humours*.²⁰ The adjective αὔος ‘dry’ occurs only fourteen

¹⁹ See Trédé, 1992; also Craik, 1998, 209–213.

²⁰ See Nachmanson, 1917, 278.

times in the HC whereas the synonymous ξηρός is ubiquitous. But as over half of these instances are in the gynaecological works of the group, with a scatter of single instances elsewhere, it appears that the incidence of αὔρος is in accord with the affinities in vocabulary already noted. The verb αὐαίνω too occurs in the group, with over half of the seventeen Hippocratic occurrences (including *Nat. Pue.* 17 and 34 [7. 498 and 546 L.]; *Morb.* 4. 45 [7. 570 L.]).

τὰ δὲ ἀπαλὰ καὶ πονεύμενα καὶ κάθυγρὰ, ἀδὴν ὥδε καὶ τρίχες ‘but as to (areas which are) yielding, exercised and moist—there is both gland and hair as described’: the triadic sequence emphasises the link between three crucial aspects of glandular tissue. Despite this rhetorical technique, the expression remains economical, with ellipse of inessentials such as conjunctions and the verb ‘to be’. The argument rests on the contrasts dry ~ not dry; lack of glands and hair ~ presence of glands and hair. In this collocation the verb πονέεσθαι connotes physical exertion (as in 3 above, with reference specifically to joints—here echoed—and in 16.2 below, with reference to the male body); at the end of 4 however it connotes trouble. The phrase with ὥδε ‘as described’ (lit. ‘thus’) stresses the logic of the argument.

κατὰ τοῖν οὐάτοιιν ‘beside the ears’: Joly’s emendation ὅτοιιν is unnecessary; cf. τὰ οὐάτα 13.2 below. The gland (ἀδὴν) by the ear is a major element in the comprehensive glandular symptoms of a case described in *Epidemics* (*Epid.* 4. 42 [5. 184 L.]).

ἐπὶ τῇσι μασχάλησιν ‘at the armpits’: in *Prorrhetic* 2, the armpits are included among bodily areas hard to treat because there are ‘deposits’ there (*Prorrh.* 2. 11 [9. 32 L.]); in *Epidemics* 7, a patient who ultimately dies has swelling both in armpit and in neck (*Epid.* 7. 44 [5. 412 L.]).

βουβῶνες καὶ ἐπίσιον ἱκέλως μασχάλησιν, ἀδένες καὶ τρίχες ‘groin and pubic area, just like armpits: glands and hairs’: the abbreviated syntax matches the abbreviated argument. The compressed but clear manner of expression continues in the conclusion (sc. ‘there are’) ‘glands and hair’ with ellipse of the verb ‘to be’. The ensuing explanation, in terms of cavities and moisture, is expressed with the same trenchant economy. The groin, that is the inguinal region (the region which includes the upper part of the front of the thigh and the lower part of the abdomen), is important in the author’s theories. It is commonly affected by enlarged

glands (inguinal lymph nodes) or cysts and also by inguinal hernia. (Cf. 8 below.) In the related gynaecological works, various eruptions and pains in this area are mentioned; the aetiology postulated there is similar in reasoning to that advanced here (*Mul.* 1. 4, 8, 9, 38 [8. 26, 34, 38, 92 L.]; cf. also *Nat. Pue.* 15 [7. 496 L.]).

καὶ γὰρ πονεῖ ταῦτα καὶ κινεῖται μάλιστα ‘for these areas suffer trouble most and are most readily disturbed’: that is ‘prone to disturbance’: pathological change is equated with ‘motion’, the verb κινεῖσθαι often being used of peccant matter, typically bile or phlegm, disturbed and roving in the body (cf. on 11 below).

V

This part of the work is poorly arranged and the argument somewhat opaque. This is due rather to allusiveness in content and excessive brevity in expression than to lack of clarity in the underlying thought. After the argument for a general association of glands with hair is presented in 4, the topic of glands not associated with hair is introduced: the large intestinal glands serve as an example. A brief digression, drawing an analogy between hair in the body and seed in the ground, interrupts the train of thought, resumed in a discussion of the operation of intestinal glands. It seems to be recognised that the glands in the intestines are the biggest in the body, but their location and function receive very cursory treatment—so cursory that it is difficult to determine whether the reference is to large organs or merely to prominent lymph nodes.

1. τὰ δ’ ἄλλα ὅποσα ἀδένας ἔχει μοῦνον ‘all other (places) which just have glands’: the relative pronoun, equivalent in meaning to ὅσα, denotes ‘as many as’; a preceding πάντα ‘all’ is implied. The substantive χωρία ‘places’ may be understood. The neuter plural is used in a similarly allusive way with reference to areas of the body under discussion in 4 above: ὅπου τελματώδεα, 4.1; τὰ δὲ ἀπαλὰ καὶ πονεύμενα καὶ κάθυγρα, 4.2; ταῦτα μὲν κοῖλα, 4.2. Strictly speaking, the placing of the adverb μοῦνον ‘just’, ‘only’ is illogical, as it has not yet been conceded that glands alone (without accompanying hair) exist.

οἷον ἔντερα ‘such as the intestines’: the choice of example, an area with major glands, seems disingenuous. The term is used of the entire

alimentary canal situated below the stomach, an area with complex blood and lymph streams.²¹ It is unclear whether reference is merely to the mesenteric lymph nodes, which might if observed in anatomical exploration have been regarded as parallel to the known inguinal and axillary lymph nodes, or rather to the major glandular complex with which these are associated.

ἔχει γὰρ καὶ ταῦτα ἀδένας [ἐς τὸ ἐπίπλοον] μέζοντας ‘for these too have fairly large glands [towards the omentum]’: the phrase ‘to the omentum’ (or ‘epiploon’, so called because it seems to ‘float’, covering the intestines anteriorly like an apron) is intrusive, possibly inserted through a slip of the eye to ἐς τὰ ἐπίπλοα below. μέζοντας ‘fairly large’ is not a true comparative, as there is no obvious point of comparison.

καὶ γὰρ ἐν τοῖσι τέλμασι τῆς γῆς καὶ καθύγροισιν οὐ φύεται τὸ σπέρμα, οὐδὲ ἐθέλει ἀναβαίνειν τῆς γῆς ἄνω, ἀλλ’ ἀποσήπεται καὶ ἀποπνίγεται τῇ πλεονεξίῃ ‘in the same way in fact (lit. ‘for in fact’) in bogs and moist parts of the earth, seed does not germinate and fails to go up through the earth, but rots away and suffocates through excess (of moisture)’: καὶ γὰρ is (DGP 108–109) a common collocation of particles in explanatory exposition, γὰρ being connective and καὶ conveying ‘in fact’ as here or ‘also’ as in 6.1 below; οὐδὲ is a necessary correction of οὔτε, which would require a second οὔτε preceding or following. The metaphor of marshy ground introduced in 4, making a connection between the earth and the body, is here developed. The same word, σπέρμα ‘seed’ was used of animal semen and vegetable seed alike; Latin translations using the verb *nasci* ‘be born’ (Calvus followed by Foesius and still Ermerins) maintain the vividness of the association. This agricultural metaphor is deeply ingrained in Greek culture: the formula of betrothal, recurrent in the plays of Menander (e.g. *Dsc.* 842, *Perikeiromene* 1010), is παίδων ἐπ’ ἀρότῳ (or σπορᾷ) γησίῳ ‘for the “cultivation” (or “sowing”) of legitimate children’. The analogy plant ~ embryo, earth ~ womb can be seen in Empedokles (DK 31 A 70 = Aet. 5. 26. 4).

The observation that too much moisture in the earth will stifle seed growth leads to the notion that too much moisture in the body will have a similarly stifling effect. In gynaecological contexts, it is supposed that excessively heavy menstruation (believed to course to the womb after

²¹ See diagram BMD 286.

conception) will stifle the seed and cause miscarriage. Strikingly, the same verbs ἀποπνίγειν and ἀποσπείν (see also 17, below) are used of foetal distress resulting in miscarriage or stillbirth: the embryo ‘is suffocated’ and dies in the womb. (See especially for ἀποπνίγειν *Nat. Mul.* 35 [7. 378 L.]; *Mul.* 1. 60 [8. 120 L.], associated with ‘dropsy’; *Steril.* 213 [8. 412 L.], associated with an excess of menstrual blood going to the womb after conception; and for ἀποσπείν *Mul.* 1. 78 [8. 186, 188 L.]; the latter term is used also of gangrenous conditions, as for example *Prorrh.* 2. 1 [9. 6 L.], *Aph.* 6. 58 [4. 578 L.]) A corollary view is that growth in the womb and growth in the earth both require moisture for proper nurture (*Nat. Pue.* 22 [7. 514 L.]); also, different plant growth is due to different fluids contained in the soil (*Morb.* 4. 33–34 [7. 542–544 L.]). Plant and human nutrition are linked also in *Ancient Medicine* (VM 14 [1. 602 L.]).²² And analogies of a similar type are pervasive in *Regimen* 4; for example, fruitless trees are linked with human infertility (*Vict.* 4. 90 [6. 654 L.]). In an irrigation metaphor, Aristotle likens the blood vessels in the body to water channels in a garden (*PA* 3. 5, 668a). In the Aristotelian *Problemata* a more pragmatic slant appears, considerations of therapy being allied with physiology: liquids administered to the fevered patient are like rain falling on the earth, in that the ὀχετοί ‘channels’ of body and soil alike can absorb only a limited amount and, in the case of the body, any excess will run off εἰς τὰς σάρκας ‘into the tissues’ (*Arist. Probl.* 1. 55, 866a).

1–2 βιῖται ... βιῖται ... ‘overwhelms ... overwhelms ...’: the parallel repeated verb, middle not passive in sense, emphasises the analogy. In both cases, excess of moisture brings an ineluctable destructive force. The same form of the same verb is used in a similar metaphor of germination and growth in *Nature of the Child* (*Nat. Pue.* 22 [7. 514 L.]): nutrition and growth in pregnancy depend on the condition of the mother, just as the nutriment of plants depends on the condition of the earth; in both cases moisture is necessary for the swelling of the seed. Maturation in plants and fruits is a corollary to the infant’s coming to term in the womb (*Septim.* 1 [7. 436 L.]; *Octam.* 12 [8. 458 L.]). It occurs also in the literal sense ‘force’ used of the infant emerging through the birth canal (*Nat. Pue.* 30 [7. 532 L.]; cf. *Septim.* 1 [7. 436 L.]) and of the stillborn child being removed (*Mul.* 1. 70 [8. 146 L.]). In *Diseases* 4, pre-existing phlegm in the head is said to be forced out when further phlegm arrives (*Morb.*

²² See Schiefsky, 2005, 244–245.

4. 35 [7. 548 L.]). Similarly in *Places in Man*, the verb is used of bile being forced from the body (*Loc. Hom.* 33 [6. 326 L.]) and in *Regimen* 1 of the strong action of dry and moist elements of food in the body (*Vict.* 1. 7 [6. 480 L.]). βιάω is an epic form of the verb βιάζω, the latter being much more common in the HC. The contraction of the verb (infinitive βια + εσθαι, third person indicative βια + εται) to βιῖται is Doric (αε becoming η); the Attic equivalent would be βιᾶται (αε becoming α).

2. ἡ πλθὺς καὶ τὸ ὑγρὸν πολὺ, καὶ οὐκ ἂν φύσαι τρίχας ‘superabundance and much moistness ... and (it is not possible) to grow hairs’: the hendiadys emphasises the importance attached to the twin conditions of excess and moisture; substantive and adjective are conjoined in a mannered *variatio*. The explanation that the growth of hair is stifled is economical in expression, but clear.

αἱ δὲ ἀδένες μέζονες ἢ που ἄλλοθι τοῦ σώματος· καὶ νέμονται αἱ ἀδένες ἐν τοῖσιν ἐντέροισιν ἐκπιεζόμεναι τὸν πλάδον ‘the glands (there) are larger than anywhere else in the body. The glands in the intestines press out and distribute wetness’: the recurrent concept of ‘the rest of the body’ is given a slightly different expression. Here (contrast above) μέζονες is a true comparative. The important concepts of pressure and consequent displacement are present here as throughout.

τὰ δὲ ἔντερα ἐκ τῶν τευχέων ἐς τὰ ἐπίπλοα ἐκδέχεται καὶ καθίησι τὴν ὑγρασίην ‘the intestines receive the moisture from the channels, take it to the omentum and send it down’: Erotian (T 9) glosses τεῦχος· τὸ ἀγγεῖον ἀκουστέον τὸ περιέχον τὰς σάρκας καὶ τὰ νεῦρα· δέρμα δὲ τὸ κάλυμμα τοῦ τεύχους ὀνομαστέον. This can be very loosely paraphrased as ‘the bodily frame’, but this is with reference to a passage in *Epidemics* 6 (*Epid.* 6. 2. 1 [5. 276 L.]);²³ commenting on this, Galen gives a similar explanation, τεῦχος μὲν ἀκουστέον ἐστὶν ὅλον τὸ σῶμα ‘teuchos is to be understood as the entire body’ (*Hippocratis Epidemiae et Galeni in illum Commentarius*, 17A. 899 K.). Here the sense is surely of ducts, vessels or tubes: it corresponds to the φλέβες said to exist in all glands in 1 above. Writing on the form and function of the epiploon, Aristotle describes it as ὑμὴν ... πληρεὲς φλέβων ὃν πολλῶν καὶ πυκνῶν ‘a membrane full of a multitude of thick vessels’. In the same passage Aris-

²³ See Nachmanson, 1917, 213–214.

totle explains that the mesentery serves the essential function of conveying food to all parts of the body: food travels by the vessels in the same way as, in the earth, food reaches plants by their roots (Arist. *PA* 4. 4, 678a). The two passages, Aristotelian and Hippocratic, differ in emphasis but are remarkably similar in tenor, both invoking ‘nature’ to explain bodily function, and in theory, both describing bodily distribution by ‘ducts’.

τὸ δὲ ἐπίπλοον διαδίδοι τῇσι δὴ ἀδέσιν ‘the omentum distributes it by the glands’: V’s τῇσιν δὲ ἀδένῃσιν is clearly wrong. In the text suggested, δὴ (as often in this author) is explanatory. van der Linden’s suggested emendation τῇσιν ἀδέσιν is a simple alternative. The verb διαδίδοναι is used of various kinds of secretion or excretion, for example in *Koan Prognoses* of the bowels (*Coac.* 1. 67, 2. 443 [5. 598, 684 L.]); it is used also in *Diseases* 4 (*Morb.* 4. 37 [7. 554 L.]) of nourishing moisture being distributed within the body and similarly by Aristotle of food conveyed to the vessels (Arist. *PA* 4. 4, 678a). The dative might alternatively be regarded as a dative of advantage, ‘for the glands’.

VI

The place of the kidneys is briefly discussed: they are saturated with moisture, as in a constant process they attract but do not absorb moisture, this flowing down to the bladder. The glands of the kidneys are apparently viewed as unusual and in this truncated account seemingly equated with ‘ducts’.

1. ἔχουσι καὶ οἱ νεφροὶ δὴ ἀδένας ‘the kidneys too have glands’: V’s reading is retained, with slight alteration of misplaced δέ to emphatic δὴ. Ermerins’ emendation εἰσὶ δὲ καὶ οἱ νεφροὶ ἀδένες ‘the kidneys too *are* glands’ is attractive, but it is a cogent objection that the appearance of the kidneys is conspicuously at odds with the general description of glands, 1 (though arguably compatible with the ‘places full of blood’, 3). As it stands the statement makes sense with reference to the adrenal (or suprarenal) glands, two small triangular glands situated one on the upper end of each kidney. These are more or less prominent in different animal species. The size changes with age, being largest during foetal development. The author may have been prompted to include the adrenals because of their appearance when opened. Inside is a narrow triangular cavity containing

‘unctuous viscid liquor’ which changes with age but is always ‘yellowish’ and which ‘resembles the bile’.²⁴

καὶ γὰρ οὗτοι κορίσκονται ‘for these too are saturated’: the same verb is used in 14 below, of the lung saturated with phlegm. It is used also in *Articulations*, metaphorically of a patient becoming sated (‘fed up’) of a constricting device: ὁ ἐπιδεδεμένος κορίσκεται (*Artic.* 35 [4. 158 L.]). The reference (masculine pronoun) is to the kidneys themselves.

μέζους δὲ αἱ ἀδένες ταύτῃ ἢ αἱ ἄλλαι ἀδένες ἐοῦσαι ‘the glands in this situation are bigger than the other glands’: if we keep the text (which looks suspiciously like an alternative formulation of the statement in 5 above) ταύτῃ is a necessary emendation for V’s reading ταῦτα ‘these’, ungrammatical neuter plural. Clearly the adrenal glands are not bigger than all other glands (nor indeed are the kidneys themselves). However, though small, the adrenals are bigger than the lymph nodes of the intestines which seem to be suggested at the end of 5. Or the comparative adjective might here have the sense ‘more important’, the kidneys being so evidently crucial in body function. The use of the participle for indicative, an idiom occurring here and elsewhere in the work, is a common feature of later prose; however, as it is found sporadically earlier this is not in itself conclusive evidence for a ‘late’ date.²⁵

ὅ τι ἂν ἀποκερδάνωσιν ἀπὸ τῶν ὀχετῶν ‘whatever gain they can get from the ducts’: the indefinite construction expresses the idea of parts benefiting from the arrival of moisture, cf. 4.1 above. The kidneys are envisaged as engaged in a constant quest for moisture: they keep on drawing moisture from the ducts and it keeps on flowing away. The ‘ducts’ here intended are surely not the ureters, unless their activity is improbably visualized as a two way process, but rather the adrenals; in *Articulations* the word is used in two passages in close succession of different bodily canals (*Artic.* 48, 50 [4. 216, 218 L.]). Similar ideas are similarly expressed in *Places in Man*: dry parts κερδαίνουσιν ‘benefit’ from bodily δίοδοι passageways (*Loc. Hom.* 9 [6.292 L.]). Reciprocity in bodily function is a reiterated principle.

²⁴ Encyclopaedia Britannica, 1st edn (Edinburgh, 1771), s. v. Anatomy, 269.

²⁵ Pace Mørland, 1941; cf. Joly 109.

VII

After a brief preamble stating that many other small glands exist, but eschewing digression as only the most important ones are to be discussed, the topic of glands in the neck is introduced. Then, in an explanatory excursus, the key idea of two types of flux up to and down from the head is presented before glands of the neck and their ailments, with some mention also of the ear, are treated. In this brief account, based on close observation, acute clinical deduction is apparent. In cases where tonsils and/or adenoids are enlarged, there is frequently spread of infection to the ear, resulting in impaired function of the Eustachian tubes and secretory otitis media.²⁶ The description would be appropriate also for a goitre (an enlargement of the thyroid) or to swelling of the lymph nodes of the neck, such as can be caused by various cysts, which are not to do with the glands but which would be full of fluid, in some cases eventually draining externally to the skin somewhat like an abscess.

The composition is in some respects careful: one antithesis embedded in another (μέν ... μέν ... δέ ... μέν ... δέ); repeated triadic expression (φλεγμαίνει καὶ συνοιδίσκεται καὶ συντείνει followed by φλεγματώδες καὶ πολὺ καὶ ἀργόν); explanatory ‘thus’ to explain the two types of swelling in ear and neck (οὕτω and ὥδε). Although original oral delivery cannot be excluded, expressions in terms of the author’s λόγος ‘account’ (spoken or written) appear in conjunction with reference to his γραφή (written) ‘exposition’. These expressions are allied with statements such as ‘I do not wish to digress’ or ‘now I shall continue’. These sentiments are paralleled both in *Articulations* (single instance) and in the cluster *Generation* etc. (very many instances). These similarities are such as to suggest some influence or interaction between the writers, perhaps operating in interrelated ‘groups’. Certainly, both are authoritative and magisterial in their didactic tone. See Introduction II.

1. καὶ ἄλλαι δέ εἰσιν ἐν τῷ σώματι ἀδένες μικραὶ καὶ πάνυ ‘furthermore, there are other really small glands in the body’: the initial καὶ has the sense ‘also’, ‘in addition’; δέ is connective; καὶ πάνυ has an emphatic intensifying force. The author gives the impression that he has more knowledge than he chooses to present; perhaps he is in fact aware of the existence of many smaller lymph nodes deep inside the body. In other

²⁶ See BMD s.v. nose, diseases of; tonsils.

Hippocratic works too, anatomical exposition is presented with the *caveat* that it is incomplete. In *Places in Man*, it is stated that there are many small joints and vessels in the body (varying from one specimen to another); only the common elements are described and the ‘insignificant’ are disregarded (*Loc. Hom.* 6.10 [6. 290 L.]). In a wider expository context, the author of *On the Sacred Disease* indicates that his account is selective, as to tell of every detail would take too long (*Morb. Sacr.* 1 [6. 354 L.]); here, the technique is a timeless expedient of writers and speakers.

ἀλλ’ οὐ βούλομαι ἀποπλανᾶν τὸν λόγον ‘but I do not wish to digress in my account’: the identical words are used in *Articulations* (*Artic.* 34 [4. 154 L.]), and this has been much discussed as possible evidence of common authorship. But see Introduction II.

ἐς γὰρ τὰς ἐπικαίρους ἡ γράφη ‘for my treatise is directed towards the most important ones’: the adjective, like the related but less common substantive ἐπικαιριότης ‘opportune input’ (see 4 above), is much used in medical contexts to convey ‘significant’, especially with reference to signs, symptoms etc., or ‘opportune’, especially with reference to treatment. Usage in the author’s *Diseases of Girls* of a vital place (τόπος) in the body closely parallels that here (*Virg.* 1 [8. 468 L.]); cf. also *Fractures* of a vital nexus of tendons, muscles and vessels (*Fract.* 35 [3. 536 L.]). In non-medical texts too it has medical overtones, as in Pindar’s reference to a skilled doctor as ἱατὴρ ἐπικαιρότατος (*Pi. P.* 4. 270). There is a close semantic connection with the important concept of medical καιρός (right time, amount, proportion etc.) seen in key aphorisms (*Aph.* 1. 1 [4. 458 L.]). The reference to work written down is here explicit. And it is work with a definite purpose: the preposition ἐς ‘directed towards’, rather than περί ‘about’, suggests intent to explicate, not just to describe.

νῦν δὲ ἀναβήσομαι τῷ λόγῳ ‘as things are, I shall continue in my account’: νῦν δέ is a common resumptive expression (cf. DGP 182). The verb is used in strikingly similar statements on return to a main theme in the group *Generation, Nature of the Child, Diseases 4* (*Genit.* 11 [7. 484 L.]; *Nat. Pue.* 18 and 27 [7. 506 and 528 L.]; *Morb.* 4. 45 [7. 568 L.]); similar locutions abound in these works, cf. the ensuing ὕστερον ἀποφανέω (*Morb.* 4. 45 [7. 568 L.]). Joly regards this type of introduction, ‘fortement soulignée’ as typical of ‘le style archaïque’.²⁷ See Introduction II.

²⁷ Joly 1970 / 2003, 117, n. 2.

καὶ ἐρέω περὶ ἀδένων οὐλομελῆς τραχήλου ‘and I shall speak about glands in the neck as a whole’: although the author’s initial formulation suggests awareness of the complex system of lymphatic drainage in the neck, he confines his account to the tonsils which are strictly speaking not in the neck at all: they lie internally at the border of the mouth and pharynx rather than in the neck. Such statements on previous and ensuing topics are ubiquitous in the other writings of the author; for example εἴρηται μοι is often swiftly followed by νῦν δ’ ἐρέω (as *Morb.* 4. 35, 36 [7. 550 L.]).

παρίσθημα καλέονται ‘are called “tonsils”’: the same interest in nomenclature of glands is evident in 16, below. The term is unusual in that it is applied equally in anatomy and pathology, to a part and to an affection of that part (but similarly βουβών can refer to a gland or a swollen gland); the latter usage, evident throughout *Dentition*, can be seen also in *Aphorisms*, where the condition is linked with such glandular conditions as scrofulous swellings and pustules (cf. 2 above). Thus, παρίσθημα (tonsillitis) is first in an aphoristic list of ailments typical in older children, that is after infancy (*Aph.* 3. 26 [4. 498 L.]). Aristotle describes the ‘bipartite’ παρίσθημον as ‘fleshy’ (*HA* 1. 11, 492b). The anatomical term is explained by Rufus as equivalent to ἀντιάδες or μῆλα used of the ‘fleshy and glandular parts on each side of the throat’ (*Onom.* 64, 741 DR; cf. *Anat.* 23, 174 DR) and etymologically derived from ‘isthmus’. Pollux describes the tonsils as ‘flesh projecting on either side’ and provides both names, ἀντιάδες and παρίσθημα. Similarly, Paul of Aigina derives ἀντιάδες from the position of the tonsils, when inflamed and swollen, opposite each other, Celsus too gives the Greek name as *antiades* and distinguishes between swelling with or without ulceration (8. 12. 2; cf. 4. 9. 1 and 6. 10. 1).

2. χρεῖη τοιῷδε ‘their function is something like this’: the expression is vague, this being a professedly speculative account. The substantive χρεῖη here recalls χρέος 4.1 above and has a similarly teleological note. Ermerins, following Foësius, translates *in hunc usum comparatae* ‘adapted to this purpose’. However, the root sense ‘need’ is surely latent: bodily needs account for bodily nature. There is perhaps a reminiscence of Presocratic debates: according to Demokritos, explaining the advance of civilisation, χρεῖαν αὐτὴν διδάσκαλον γενέσθαι τοῖς ἀνθρώποις ‘necessity itself was teacher of mankind’ (‘necessity was the mother of invention’) and according to Empedokles, explaining the development of different parts in different species, this process was ἐκπληροῦν τὴν χρεῖαν

‘fulfilling need’ (DK 68 B 5 = Diod. 1. 8; DK 31 B 61 = Simpl. *Ph.* 371. 33). Although the physiology is standard in basic outline, the function accorded to the tonsils as intermediaries between head and lower body, serving to arrest and contain downward flux, is novel and ingenious.

ἡ κεφαλὴ ὑπερκεῖται ἄνω κοίλῃ ... καὶ περιφερῆς καὶ πλήρης τῆς περὶ αὐτὴν ἀπὸ τοῦ ἄλλου σώματος ὑγρασίης ‘the head is situated above, hollow and round, and full of the moisture (which flows) around it from the rest of the body’: ideas outlined earlier (the importance of moisture, the action of glands in the context of ‘the rest of the body’) are developed. This is the first of several triadic expressions in this section. In the phrase περὶ αὐτὴν the repetition of the pronoun is a characteristic feature of early prose. The preposition, περί with accusative, properly of the object round about which motion takes place, implies flow round about and in the head, leading to shallow flux, rather than into the brain, source of deeper flux. Deeper penetration by ‘vapours’ is indicated in what follows. For such external and internal flux, there are parallels in *Places in Man* and elsewhere (*Loc. Hom.* 1 [6. 276 L.]).

In *Diseases* 4, head and spleen are most hollow, and have most ‘space’ (εὐρυχωρίῃ) of the four ‘sources’ (πηγαί) of moisture (*Morb.* 4. 33 [7. 544 L.]). In this account, the function of the ‘sources’ is close to the function of glands as postulated in *On Glands*: when they are ‘full’ (πλήρεις) they pass on (ἐπιιδιόασιν) their contents in reciprocal exchange (*Morb.* 4. 39 [7. 556 L.]).

καὶ ἅμα ἀναπέμπει τὸ σῶμα ἀτμοὺς ἐς τὴν κεφαλὴν παντοίους ἄνω ‘simultaneously, the body sends all kinds of vapours up to the head’: once again there is a certain vagueness in expression, the author being non-committal about the nature of the ‘vapours’ postulated. Similarly in *Ancient Medicine*, ‘all kinds’ of χυμοί ‘humours’, ‘juices’ are vaguely envisaged (*VM* 19 [1. 618 L.]). The term ἀτμός ‘vapour’ is usually applied to steam, but the author of *Diseases* 1, clearly searching for a novel word to express a novel idea, suggests that some sweat goes inside the body and becomes ‘vapours’ through the action of heat (*Morb.* 1. 25 [6. 190 L.]). Heat or fever is similarly invoked as an explanation in *Regimen in Acute Diseases*: τοῦ θερμοῦ ... ἀναθυμωμένου ἐς τὴν κεφαλὴν ‘when heat has steamed up to the head’ (*Acut. Sp.* 13 [= 7, 2. 420 L.]). There is a still closer parallel in *Diseases* 4, an extended account which clarifies the allusive shorthand employed here. In an explanation of the onset of fever, it is explained in successive passages, the second elaborating on the first,

that the body sends off in vapour (ἀτμίᾱ, ἐξατμίᾱ) the watery quality (τὸ ὑδροποειδέες) which is most inimical to fever (πῦρ), while the light, fatty and bilious matter is left: water evaporates, while fat does not (*Morb.* 4. 45 [7. 570 L.], 49 [7. 580 L.] and 52 [7. 590 L.]; cf. *Mul.* 1. 36 [8. 84 L.] and see also on 14 below).

These Hippocratic ideas are based on a simple recurrent theme of Pre-socratic cosmology, clearly well known as it is parodied by Aristophanes (*Ar. Nu.* 232–233), that the sun attracts humidity in the form of ‘vapours’. This is seen for example in Diogenes of Apollonia (verb ἐξατμίζεσθαι, DK 64 A 17 = Alex. *In Meteor.* B, 1) and Demokritos (sbs. ἀτμίδες, DK 68 B 25 = Eustath. p. 1713); compare also *Regimen* where heat in the human body is likened to the sun’s heat on the earth (*Vict.* 2. 58 [6. 570 L.]). In the Aristotelian *Problemata*, it is suggested that a rainy summer brings danger, as the sun then finds ‘matter’ which it causes to ‘boil’ in air, earth and bodies alike; fevers and ophthalmias arise when excess bodily matter goes up as the body is heated (*Arist. Probl.* 1.8, 860a and 1.19, 861b). That these themes had a long currency is evident from a passage in Anonymus Londinensis attributing to Erasistratos views on bodily emanations described with the adverb ἀτμοειδῶς ‘like vapours’ (Anon. Lond. XXII. 15–25); another passage asserts that in ancient traditional views sun and sea were linked with bodily nutriment (Anon. Lond. XXX. 17–25).

οὐ γὰρ δύναται ἐμμένειν τὸ ἐπιρρέον οὐκ ἔχον ἔνθα ἔδρη ‘for the matter which flows in cannot remain inside, not having a proper place there’: similar ideas are expressed in similar terms in *Regimen*; food improperly retained in the body (αὐτοῦ ἐμμένον) causes trouble (*Vict.* 2. 40 [6. 536 L.]); also in *Diseases* 4 (*Morb.* 4. 45 and 49 [7. 570 and 578 L.]). ἔδρη ‘proper place’ is a regular, almost a technical, term in *Fractures* and *Articulations*, used especially with the adjective ἀρχαίη ‘old’, ‘original’ of the proper situation to which fractured bones or dislocated joints should be returned.

ἢν μὴ τὴν κεφαλὴν πονῇ ‘unless it causes the head to suffer’: on the unusual transitive use of the verb πονέειν, see on 2 above and Introduction I B; usage here resembles that of the neuter participial expressions, τὸ πονέον and τὰ πονέοντα which commonly describe the source of illness.

τότε οὐκ ἀνίησιν, ἀλλ’ αὐτοῦ κρατεῖ· ἐπὶν δὲ ἀνῇ τὴν ἔλξιν ‘in which case it does not release, but contains, it; but when it releases the stuff it

has drawn (to it)': the first case is that the head retains and absorbs or assimilates the peccant matter; the second that it releases it. The abstract noun ἑλξίς is introduced to express the activity of the verb ἑλκεῖν (cf. 2.2, 3, 6, 8, 12.1, 16.1). It occurs elsewhere in the HC only once, in *Koan Prognoses*, of a dragging retching sensation (*Coac.* 1. 55 [5. 596 L.]).

τὸ ῥεῦμα ... ὀλίγον ... καὶ σύμμετρον καὶ ἐγκρατεῖς ... αἱ ἀδένες 'the flow ... slight and proportional and the glands able to contain it': the pervasive idea that health depends on bodily balance is implicit. Flux (flow, streaming) is not invariably deleterious, but becomes so if the quality or quantity is such that the glands are overwhelmed. Similar language—verb κρατεῖν and cognates—is commonly used of the body's capacity to absorb the right quantity of food, or to withstand illness.

3. ἥν γὰρ καὶ πολὺ ἐπιρροῇ [δομὴ], ἥν μὲν ἢ δομὴ καὶ χολῶδες ... κῆν μὲν ... ἥν δὲ ... ἥν δὲ ἢ φλεγματώδες καὶ πολὺ καὶ ἄργον ἢ ῥοή ... 'but if copious [and pungent] matter rushes in—if on the one hand it is pungent and somewhat bilious ... and if ... if ...—if on the other hand the stream is somewhat phlegmy and copious and slow-moving ...': the sequence of thought involves two μέν ... δέ oppositions, one of them parenthetically embedded in the other. The main opposition is between bilious and phlegmatic matter as alternative components in flux to the neck; it is suggested that in the case of bile the flux is diverted to one or to both of the ears (parenthetically, two possibilities allowed) while in the case of phlegm it remains static and causes trouble in the neck.

The text is insecure. Deletion of the first δομὴ seems logically required, to secure a meaningful antithesis between bilious and phlegmatic content in copious flux (not in copious and acrid, i. e. bilious, flux). It could, however, stand if we allow that the adjective δομὴ is here applied indiscriminately to both bile and phlegm. V reads not χολῶδες 'bilious' but κολλῶδες 'sticky'; χολῶδες comes from Zwinger's marginalia, possibly with no more authority than that of a clever conjecture. Editors vary in their choice: Littré, followed by Joly, reads κολλῶδες (tr. 'visqueux' Littré; 'glutineux' Joly); Thivel too favours this reading, suggesting that this is the origin of the theory developed in *On Flesh*.²⁸ Ermerins argues that χολῶδες is required to balance the antithesis with φλεγματώδες. Foesius reads χολῶδες but translates *glutinosa* 'viscous'. χολῶδες is here

²⁸ Thivel, 1981, 266, n. 329.

preferred (with Ermerins) on the grounds of sense and because of the general connection between ‘pungent’ and ‘bilious’ (δριμέα καὶ χολώδεα δάκνει, *Mul.* 1. 63 [8. 128 L.]; δριμέας καὶ χολώδεας ἰχῶρας, *Acut. Sp.* 1 [2. 394 L.]).

This connection, however, though general is not invariable. The associations of δριμύς are less clearly defined than those of ὀξύς and πικρός, always associated with bile. Phlegm is in general less fixed in character than bile, varying even between hot and cold. (For these value words of taste and texture, associated with flavours of foods as well as with bodily components, see Demokritos DK 68 A 135 = Thphr. *de sens.* 77; Pl. *Ti.* 65b–66c.)²⁹ In the HC, there is considerable variation in usage. In one passage of *Diseases of Women*, phlegm is ‘pungent’, it being dangerous when in a woman of phlegmatic character ‘pungent phlegm’ goes from head to belly (*Mul.* 1. 25 [8. 66 L.]); immediately afterwards, a woman of bilious character, displaying various bilious symptoms, is said to have ‘pungent’ urine (*Mul.* 1. 26 [8. 68, 70 L.]). The substantive κολλά and the verb κολλᾶν are used in a passage at the end of *Diseases* 4 to describe the pathological action of phlegm in the bladder (*Morb.* 4. 55 [7. 602 L.])

Occasionally, in pathological states, phlegm is said to be ‘pungent’: so in *Fistulae* (*Fist.* 7 [6. 654 L.]) and in *Breaths* (*Flat.* 10 [6. 106 L.]). In the latter passage, phlegm is δριμέσι χυμοῖσι μεμιγμένον ‘mingled with (other) pungent humours’; similarly in *Ancient Medicine*, many different fluids are supposed to coexist in the body (*VM* 14 and 18 [1. 602 and 614 L.]) These need not be sharply differentiated; in *Airs, Waters and Places* it is supposed that both bile and blood contain a ‘watery’ part and also a part which is ‘thick and pungent’ (*Aer.* 10 [2. 50 L.]). The common use of the verb φλεγμαίνειν to connote inflammation rather than humoral content adds to the problem of interpretation.

The condition which is the main focus here, scrofulous eruptions of the neck, is described in *Regimen in Acute Diseases* as an aspect of σύναγχος, usually translated ‘angina’, but perhaps closer to diphtheria (*Acut. Sp.* 9 [= 6, 2. 408 L.]): a copious and sticky flux (ῥεῦμα πολὺ καὶ κολλῶδες) from the head reaches the jugulars and being cold and sticky (ψυχρόν τε ἐὼν καὶ κολλῶδες) causes a blockage, making the blood unmoving and static (ἀκίνητον καὶ στάσιμον). The adjective κολλῶδες would fit the context of the second case outlined in our treatise, not the first: an association with such adjectives as παχύς ‘thick’ and γλίσχρος ‘viscous’

²⁹ Further passages are discussed by Lonie, 1981, 279–280.

can be seen in *Diseases of Women* of menstrual blood and in *Epidemics* of ichor (*Mul.* 2. 114 [8. 246 L.]; *Epid.* 7. 61 [5. 426 L.]). In *Articulations*, treatment of an ear abscess is succinctly described, the location being ὕδατώδεα χωρία ἢ μύξης πεπληρωμένα ‘parts with watery content or full of pus’; there, flux is excluded and doctors who expect to find it are regarded as mistaken (*Artic.* 40 [4. 172, 174 L.]). The contrast between mobile bile (thin, hot, quick etc.) and static phlegm (thick, cold, slow etc.) is made only implicitly, as the writer is more concerned with the resulting pathology than with the precise nature of its cause. Thus we are told, with a somewhat excessive attention to detail, that the neck regularly sends on (προίει, idiomatic imperfect indicative of specific compound verb) the flow to one ear or to both (ἐκάτερα ... ἐκάτερον ‘both ... each of two’ or θάτερον = τὸ ἕτερον in crasis, ‘one of two’).

ἡ φλεγμονή, στάσιμον ἐὼν ὑγρόν ‘the phlegmy matter, being static moistness’: the translation ‘phlegmy matter’ is appropriately vague, following ‘somewhat phlegmy’ above. Similarly below (17) φύματα and φλεγμοναί are allied as ‘pustules of phlegmy matter’. Phlegm is the matter of flux to the lung (14), but otherwise appears only in the simile ‘like phlegm’ (1). The definition ‘static moistness’ is significant, indicating the dominant association of phlegm-words with fluid. Thus φλεγμαίνειν (7.3 *bis*, 8) is translated ‘become full of (be filled with) fluid’. Inflammation is indicated by the verb φλογιᾶν (2.2). It appears that the author follows Demokritos’ view of φλεγμονή as disputed by Soranos: Soranos preferred the derivation from φλέγειν ‘blaze’ and not, with Demokritos, that from φλέγμα (DK 68 A 159 = Soran. *Gyn.* 3. 17). In modern terms, the author describes oedema, defined (BMD) as ‘an abnormal accumulation of fluid beneath the skin, or in one or more of the cavities of the body’, not itself a disease but a sign of an underlying local or systemic disease, arising ‘when the mechanisms which maintain balance between fluid in the tissues and the blood are upset’. The mechanism is of course much more complex than our author envisaged; but whether by happy chance or by clinical intuition he is correct in seeing the crucial importance of bodily balance and interpenetration.

αὗται [χείρους] αἱ νοῦσοι τραχήλου ‘these are the [worse] ailments of the neck’: V’s χρείοις is meaningless and the emendation χείρους ‘worse’ (‘more troublesome’) is otiose in sense. Littré tentatively suggests αὗται αἱ χρεῖαι καὶ νοῦσοι τραχήλου ‘tels sont les usages et les maladies du cou’, but in text retains χείρους ‘des maladies du cou sont pires’.

The corruption may have arisen from the proximity or possibly even the repetition, of *χοιράδες* ‘scrofulous swellings’; this may underlie also Zwinger’s meaningless marginal insertion, *χοίρων*.

VIII

Glands of the armpits and the groin are discussed. General points applicable to all glands are made with regard to the theory of their proper and beneficial function of bodily drainage and their malfunction when affected by excessive or pungent fluids.

1. *μασχάλησι δὲ συρρεῖ μὲν καὶ ἐνταῦθα, ἀλλ’* ... ‘matter flows together in the armpits—there too—but ...’: the emphasis of the sentence is pointed by the initial position of *μασχάλησι* ‘armpits’. The armpits were mentioned as an instance of a place in the body where glands and hair are found together (4 above), but glands there are not much emphasised, perhaps because they do not fit well with flux theory. It is possible that clinical observation of lymphatic spread of such disease as breast cancer (see on 17) underpins the author’s argument. But various kinds of glandular malaise may have been observed; ‘deposits’ in the armpits are noted in *Prorrhetic* 2 (*Prorrh.* 2. 11 [9. 32 L.]) and in *Epidemics* 7 a swelling—hard, red, livid and hot—originating in the armpits and the neck, then progressing down the entire right side of the body, is described (*Epid.* 7. 44 [5. 412 L.]). The use of *μὲν ... ἀλλὰ* in place of the common *μὲν ... δὲ* generally expresses a strong contrast. This passage has been regarded as ‘curious’ and lacking ‘any adversative sense’ (DGP 5–6; cf. 21 on 16 below, ‘progressive’ use of *ἀλλὰ*), but surely wrongly: the sense is that (normal and harmless) confluence occurs in the glands of the armpit when there is proper bodily balance, *but* also (abnormal and harmful) confluence when there is disruption in quality or quantity of flow.

ἀλλ’ ὅταν πλῆθος ἢ (ῆ) δομεῖς ἰχῶρες ‘when there is an excess ⟨or⟩ pungent noxious matter’: the addition of *ῆ* ‘or’ by Ermerins is palaeographically easy (explained by haplography) and greatly aids the syntax and sense. In the previous section, an excess of bilious matter was contrasted with an excess of phlegmatic matter; here, the contrast is between quantity and quality: an excess (unspecified) and peccant (bilious) matter. However, if emendation is eschewed in 7 above and it is supposed that the contrast between the different types of peccant matter is less sharp

than that between bile and phlegm (both types being copious and ‘pungent’ but simply one ‘sticky’, the other more moist), this passage may be treated correspondingly, with the emendation *πληθος ἢ (καὶ) δοιμεῖς ἰχῶρες* ‘there is an excess *and* pungent noxious matter’ rather than ‘an excess *or* pungent noxious matter’, as above. *Ichor* is commonly the noxious matter resulting from pathological change in body fluids: the term is used in *Places in Man* of matter resulting from flux to the ears (*Loc. Hom.* 12 [6. 298 L.]); similarly in Dexippos of Kos bile and phlegm which melt are said to become *ichor* (Anon. Lond. XII. 24).³⁰

καὶ ὧδε γίνονται φύματα ‘in this way too pustules form’; this passage indicates, with typical use of ὧδε ‘thus’, how in the author’s view one particular type of glandular trouble fits his general theory, expressed 2 above; cf. also 17 below.

κατὰ ταῦτα καὶ ἐν τοῖσι βουβῶσιν ‘in the same way, in the groin too’: the parallelism in function of all glands (drawing moisture to themselves from parts above—originating in the head—absorbing it in health and suffering problems of similar kinds in illness) is stressed. The term βουβών, often plural βουβῶνες, ‘groin’ is applied to various glands, especially in a pathology of pain or swelling: in general prognostic terms (*Epid.* 2. 3. 5 [5. 108 L.] and, with very similar sense, *Coac.* 1. 73 [5. 600 L.]); with reference to the ears and the neck (*Epid.* 2. 2. 5 [5. 86 L.]); with reference to the groin and the neck (*Epid.* 5. 59 [5. 240 L.]); with reference to a disease linked with others, *hippouris* and *kedmata*, similarly located in the hips or the groin (*Epid.* 7. 122 [5. 468 L.]). As an anatomical term here and 4 above it refers specifically to the groin, as in *Articulations* (*Artic.* 41 and 57 [4. 178 and 246 L.]). Pliny refers to a plant *bubonium*, used to counteract swelling in the groin (Plin. 27. 5. 19).

ἔλκει τὴν ἀπὸ τῶν ὑπερκειμένων ὑγρασίην ἢ ἀδὴν ‘the gland draws the moisture from (the parts) situated above it’: the head is situated ‘above’ (7.1, cf. 10).

ἄλλως εἰ πληθος λάβοι, βουβωνοῦται καὶ διαπύσκειται καὶ φλεγμαίνει ἰκέλως μασχάλησι τε καὶ τραχήλῳ ‘otherwise, if it should take an excess, it swells and becomes purulent and is filled with fluid just as

³⁰ See Craik, 1998, 147.

(in the case of) armpits and neck': 'otherwise' that is, 'when things go wrong'. The form of the condition (εἰ with optative in protasis, indicative in apodosis) is much used in *On Glands* to express a general truth. The three verbs form an emphatic triad, a rhetorical type of structure much favoured by the author, describing simultaneous results in similar, but not quite synonymous, terms. The corresponding pathology is expressed in a similar triad in 7 above: φλεγμαίνει καὶ συνοιδίσκεται καὶ συντείνει 'becomes full of fluid and starts to swell and becomes taut'. Purulence not mentioned in the verbs is implicit in the ensuing description of complications. Here, the first is the *mot juste* for glandular swelling (the verb apparently being retained in a general sense when the substantive acquires the specific sense 'groin'); the second is an inceptive form (διπυίσκομαι 'become purulent', somewhat less common than διαπυέω 'be purulent', 'suppurate'; cf. the form of συνοιδίσκεται 'starts to swell' in the triad above); the third stresses the moisture which is such a prominent feature throughout the treatise.³¹ The verb βουβωνόομαι may be used of the swelling caused by a hernia; the related verb βουβωνιάω is used by Aristophanes with sexual innuendo, implying phallic erection (Ar. *Ra.* 1280; cf. *V.* 227). ἰκέλως μασχάλησί τε καὶ τραχήλῳ 'just as (in the case of) armpits and neck': compendious comparison, with ellipse of mention of illness.

τὰ δ' αὐτὰ οἱ δοκεῖ παρέχειν ἀγαθὰ καὶ κακὰ 'seems to accord it the same benefit or harm': the author's liking for comprehensive expression, and preference for the indirect reflexive, are both apparent.

καὶ ταῦτα μὲν ἀμφὶ τῶνδε 'that is enough on this subject': μὲν is used idiomatically without ensuing δέ. Similar laconic, apparently dismissive, formulaic transition to another topic (such as ταῦτά δέ μοι ἐξ τοῦτο εἴρηται) is constantly recurrent in *Genit.*, *Nat. Pue.*, *Morb.* 4.³²

IX

Glands of the intestines are addressed initially: these usually function well, as do glands in the joints (that is, glands in general). Reasons for this are given in rather theoretical or philosophical terms: a democratic

³¹ Cf. Joly 123, notes complémentaires (with reference to 117, l. 20).

³² Cf. Regenbogen, 1950, repr. 1961, 173–176; Joly 118, n. 1.

community of glands is postulated. This closely resembles Alkmaion's theory of health as 'balance'. The transition, through analogy, from specific to general observations is abrupt. Fundamental matters are here addressed, as the two main locations of glands were identified initially as bodily 'cavities' and 'joints' (3). Healthy function is of less interest to the author than malfunction; however, awareness of the complex natural physiology of the body in health is implicit. The transmitted text is clearly corrupt (accusatives in V where nominatives are required; word division awry) and though it is readily ameliorated by the emendations of Littré and others, the overall sense remains compressed and difficult.

1. τὰ δὲ ἔντερα ἔχει κόρον πολὺν 'the intestines have a great saturation': the related verb κορίσκεσθαι is used of saturation in the kidneys with moisture (6, above) and in the lungs with phlegm, that is with phlegmy moisture (14, below). The author's sequence of thought is consistent: ears, neck, armpits, groin (4) are followed by intestines (5); neck and ears (7) are followed by armpits and groin (8), then by intestines (9). The abstract noun κόρος and the verb κορέννυσθαι, a doublet of κορίσκεσθαι, here used of saturation in the concrete, literal sense, are much used in literary texts in the more abstract, metaphorical sense of satiety, sometimes in relation to food, sometimes rather allied with an excess of pride or *hybris* (cf. LSJ, s.v.). The corollary linguistic expressions illustrate the development of technical medical language from regular usage, especially that prevalent in Ionic and poetic texts. An expression used of food intake in *Ancient Medicine*, πρὸς ἡδονὴν τε καὶ κόρον (VM 14 [1. 604 L.]) is close to literary usage (as βορᾶς κορεσθεῖς, E. *Hipp.* 112).

ἔχει δὲ καὶ τὴν ὑπὸ τοῦ δέρματος ὑγρασίην 'in addition, they contain the moisture (present) under the skin': subcutaneous moisture is believed to coexist with moisture coming from food and drink. The effects on the body of additional material from consumption of food and drink are explored in *Diseases* 4; the fuller exposition there of the place of moisture in the digestive process indirectly amplifies and explicates the passing allusion here (*Morb.* 4. 44 [7. 566, 568 L.], reiterated *Morb.* 4. 49 [7. 578, 580 L.]).

αὕτη πᾶσα ἀπαναισιμοῦται ἰκέλη τοῖς πρόσθεν 'all this is absorbed in the same way as in the previous cases': the author's scientific method is to formulate general rules on the basis of many examples, so establishing an overarching theory. Both ἰκέλως in the previous section and ἰκέλη here

introduce a compendious comparison. The verb is hapax in the HC; with *καταναισιμοῦται* it is treated by Foesius (cf. on 3 above).

νούσους δὲ οὐ ποιεῖ τὰ πολλά, ὅπως περ καὶ ἐν τοῖσιν ἄρθροισι γίνεται ‘it does not cause ailments for the most part, just as happens in the joints too’: *περ* following *ὅπως* has an intensifying force, further emphasized by *καὶ* ‘as well’. This indicates that the clause is a corroborative statement, *pace* Joly (‘à la différence de de ce qui arrive dans les articulations’) and Potter (‘contrary to what happens in the joints’) who take it to be contradictory. The intestines, which are *κοῖλα* ‘cavities’ (cf. the common use of *κοιλία* ‘belly’), are now likened to the other main type of glandular area posited, ἄρθρα ‘joints’.

συχναὶ γάρ τοι ἰστέρες καὶ ἀναπετεῖς, καὶ οὐ κοῖλαι ‘for indeed the glands are numerous and outspread and not hollow’: the author’s fondness for triadic expression and for strongly asseverative expression is again apparent. *τοι* ‘indeed’, ‘I tell you’ has a gnomic force (DGP 537). The adjective *συχρός* with substantive in the singular has the sense ‘large’; with substantive in the plural the sense ‘many’, ‘copious’. This is the only occurrence of *ἀναπετής* ‘open’, ‘outspread’ in the HC, but the verb *ἀναπετάννυμι* occurs in the sense ‘flare open’ of nostrils (*Morb.* 3. 7 [7. 124 L.]) and also, in the perfect participle passive, applied to moisture ‘which has spread’ (with the emendation *ἀναπεπταμένην* for *-ον*, *Loc. Hom.* 6 [6. 288 L.]). In the latter passage, the context is as here that of joint-moisture, potentially excessive and damaging. The second two adjectival descriptions ‘outspread’ and ‘not hollow’ are not synonymous, but have a complementary sense, both indicating circumstances which prevent blockage: the glands are not narrowly tubular. (The negation of hollowness applies only to the actual glands, not to their surroundings: glands have vessels which are hollow, 1; glands are situated in hollows, 3 and 4; and the head, which contains the glandular brain, is hollow, 7.2.)

καὶ οὐ πολὺ πλῆθος ἐπαυρισκόμεναι ἢ ἑτέρη τῆς ἑτέρης, ἐπεὶ μᾶλλον πλεονεκτεῖν ἐθέλουσα οὐδεμία τότε πλεον ἔχειν δύναται, ἀλλ’ ὀλίγον ἐκάστη τὸ συρρέον ἐς τὸ ἄρθρον ἐς πολλὰ διαιρεόμενον· ἰσότης ἐστὶν αὐτῇσιν ‘and they do not get benefit of superabundance one more than another, since even if it did wish to gain more none can have more, but each one gets a little of matter flowing together into the joint, distributed in many shares. There is parity among them’: Ermerins’ emendation to a genitive absolute ἀλλ’ ὀλίγου συρρέοντος ἐς πολλὰ διαιρεομένου *sed*

pauco humore affluente et in multas partes diviso ‘but with a small amount of moisture flowing in and divided in many parts’ eliminates mention of the joint, but—although the transition to the joint, above, is abrupt and at first seems merely to introduce an analogy—this would interrupt the author’s train of thought, in which ‘cavities’ (by implication including the intestines, just discussed) and ‘joints’ are linked.

Erotian (A 36) glosses ἀπαυρίσκεται ἀπολαύεται with reference to *Nature of the Child*.³³ ἐπαυρίσκεσθαι with its less common form ἀπαυρίσκεσθαι is used repeatedly (eighteen of the twenty-five occurrences in the HC) in these related works, always in the sense of bodily interchange, reciprocity, parity and equilibrium.³⁴ Thus, in the key account of the theory that bile, blood, water and phlegm arise from food and drink and have a four-fold distribution from ‘springs’ or ‘sources’ (πηγαί) in the body, the body draws (ἔλκει) from the sources while the sources in turn benefit from the body (ἀπὸ τοῦ σώματος ἐπαυρίσκονται) (*Morb.* 4. 33 [7. 542 L.]). The author’s theory extends to bodily interchange in sickness: in the formation of a φῦμα ‘pustule’, ἐπαυρίσκεται τοῦ αἵματος ἢ σάρξ ‘flesh draws on blood’ (*Mul.* 1. 2 [8. 20 L.]). The verb πλεονεκτεῖν is an unusual form, used for *variatio* alongside the common πλεόν ἔχειν and substantive πλεονεξίη. Alkmaion’s theory of health as ἰσονομία ‘balance’ of moist, dry, hot and cold and illness as μοναρχία ‘supremacy’ of one of these is similar (DK 24 B 4 = Aet. 5. 30. 1).

X

The brain is said to be a gland or to be like a gland, in both anatomical and physiological terms, on the basis of its similarity in appearance to glands (as outlined in 1) and its function in managing bodily moisture (as explained in 3, 4). The greater size of the brain in the head is reflected in the greater length of the hairs on the head (in accordance with 4, 5). The rationale for regarding the brain as glandular is twofold: the appearance of cerebral tissue, which fits that attributed to glands, and the key place accorded to the head in flux theory. Observation and speculation are inextricably linked.

³³ Nachmanson, 1917, 310.

³⁴ Cf. Lonie, 1981, 296 and 301 on *Morb.* 4. 39 [7. 560 L.]; see also Giorganni, 2006, 262–263.

1. ἡ κεφαλή· καὶ αὕτη ταῖς ἀδέσιν ἔχει ἵκελα, τὸν δὲ ἐγκέφαλον ‘as to the head, this too has (matter) like glands, the brain’: V’s text ἡ κεφαλή καὶ αὕτη τὰς ἀδένας ἔχει τὸν ἐγκέφαλον ἵκελα δὲ ἀδένι is unsatisfactory both in expression and in sense. With the emendation proposed, the awkward asyndeton is eliminated and the first two words introduce a new topic: the head, following on armpits (8) and intestines (9) echoed in the ensuing pronoun ‘this’. The construction is common, especially in works introducing a sequence of diseases. The text as transmitted is doubly illogical: it is said that the head has glands (plural) which are then identified with the brain (singular) and the brain, first said to be a gland, is then said to be merely like a gland; further, the adjective (neuter plural) does not properly qualify the noun (masculine singular) and the connective δέ is intrusive. Earlier editors deleted τὰς ἀδένας and/or made ἵκελα singular (for such expedients, see *app. crit.*); the emendation suggested here follows V more closely, retaining αὕτη and substituting apt δὴ for inappropriate and misplaced δέ.

καὶ λευκὸς καὶ ψαφαρός, ὅπως περ καὶ ἀδένες, καὶ ταῦτ’ ἀγαθὰ τῇσιν ἀδέσι ποιεῖ τὴν κεφαλὴν ‘both white and loose-textured, just as glands (are) too, and accords the same benefits to the head as glands do (elsewhere)’: characteristically, the author refers back to his own description of the character of glands (1 above); and stresses parallel features (as in 4, 8, 9 above). The same simple language of ‘good’ and ‘bad’ effects is used throughout (cf. 8, 17). The argument is compressed but clear: the brain benefits the head by absorbing moisture from it, just as other glands benefit the surrounding parts of the body.

ἔουσιν διὰ τὰ εἰρημένα μοι τιμωρέων ὁ ἐγκέφαλος ἀποστερεῖ τὴν ὑγρασίην ‘when, in accordance with my account, it is present, the brain giving relief removes the moisture’: the language may imply a spoken, rather than written, account. The author’s tendency to recapitulate and to justify his argument appears as before. The verb τιμωρέειν is similarly used below (13.1); for the sense see LSJ s.v. II. 2 of medical aid ‘relieve’; cf. also the related substantive τιμωρία. Erotian (T 17) glosses τιμωρέουσα· βοηθοῦσα with reference to *Articulations*.³⁵ In *Articulations* the verb occurs twice with reference to medical procedures (cautery, *Artic.* 11 [4. 110 L.] and bandaging, *Artic.* 14 [4. 124 L.]); usage here of the body itself

³⁵ Nachmanson, 1917, 390.

expresses the fundamental notion that the body has an inherent ability to monitor its own wellbeing. ἀποστερεῖν in the sense ‘remove’, ‘strip away’ is repeated in the form ἀποστερίζειν in 17 below; cf. the description of desiccated foodstuffs, τοῦ ὑγροῦ ἀπεστερημένα (*Vict.* 2. 56 [6. 564 L.]).

ἐπὶ τὰς ἐσχατίας ἔξω ἀποστέλλει τὸ πλεόν ἀπὸ τῶν ῥόων ‘sends the excess from the fluxes away out to distant parts’: the excess or peccant matter (cf. above, 4); is eliminated from the body by way of bodily orifices (nose, ear etc.) or surfaces (skin); cf. usage in *Fractures* (destination of *ichor* escaping from a wound, *Fract.* 5 [3. 434 L.]). As the term ἐσχατιαί is commonly applied to distant parts of a region or country there is, as elsewhere in *On Glands* (especially 5), an implicit comparison between body and landscape. There is some verbal play in the use of two verbs with similar sound but contrasting sense for the two successive stages in elimination of moisture, ἀποστερεῖν ‘remove’ and ἀποστέλλειν ‘send away’.

μέζων δ’ ὁ ἐγκέφαλος τῶν ἄλλων ἀδένων, καὶ αἱ τρίχες μέζους ἢ αἱ ἄλλαι τρίχες ‘the brain is bigger than the other glands, and the hairs (of the head) longer than the other hairs’: the concern with relative size recurs (cf. 5, 6). The question of hair growth is explored in other works: in *On Flesh* it is explained that hair grows from a part which is κολλῶδες ‘sticky’ (opposed to λιπαρόν ‘fatty’): the brain is such a part, as are armpits and pubic areas (*Carn.* 14 [8. 602 L.]). In the Aristotelian *Problemata*, the question is posed as to why the head is δασεῖα ‘hairy’ in humans, and an answer suggested in terms of τροφή ‘nourishment’ reaching the head (*Arist. Probl.* 10. 62, 898a).

ἐν εὐρυχωρίῃ κεῖται ‘it occupies a large space’: similar language is used of brain and spleen in *Diseases* 4 (head and spleen are most hollow, with most space, *Morb.* 4. 33 [7. 544 L.]; head and spleen are susceptible to maladies, having most space for moisture to accumulate, *Morb.* 4. 40 [7. 560 L.]). The language of εὐρυχωρία and στενοχωρία ‘space’ and ‘void’, lit. wide and narrow areas, which pervades the author’s scientific thinking owes much to the theorising of Demokritos.³⁶

³⁶ Cf. Lonie, 1981, 266–267.

XI

The important action of the brain in precipitating disease-inducing flux is explained. It is stated that there are seven fluxes from the head, the first three being ‘natural’ and easily resolved: to the ears, to the eyes, to the nose, via palate and trachea (and so to the chest), via palate and oesophagus (and so to the belly), via the vessels to the spine, via the vessels to the hips. The author adheres steadfastly to this regular general theory of flux (reiterated in 13, 14), though at times it sits uneasily with his more specialized theory of glands. Glands, it is said, are situated in bodily cavities and joints (3). The two fluxes to eyes and nose are then irrelevant; ear flux is regarded as allied with glands in the neck, 7; flux to the chest is discussed only briefly (14). Flux to the belly (a ‘hollow’) can be related to the discussion of the intestines, or bowels (5, 9), and with some special pleading the breasts can be subsumed here (16, 17), but there seems to be no comparable place for the kidneys (6). Flux to the spine (sacrum, 14) and to the hips may be seen in terms of the joints, the second location of glandular moisture (the groin being especially important); but the armpit (4, 8) has no place in flux theory.

1. ποιεῖ δὲ νοῦσους καὶ ἥσσονας καὶ μέζονας ‘causes ailments both lesser and greater’: that is, ailments which may be more or less serious. It is suggested that relatively minor ailments result from flux to ears, eyes and nose (common and ‘natural’), whereas the other four fluxes have more serious consequences. Similarly, the author of *Ancient Medicine* minimises such ‘obvious’ conditions as κόρυζα, the common cold (VM 18 [1. 612, 614 L.]). In *On Glands* as in other writings attributable to him, the author affects exhaustive expressions (‘more or less’ etc.), stressing relative importance in size or significance (cf. 3, 5, 6).

ποιεῖ δὲ ὁπόταν ἐξ τὰ κάτω τοῦ σώματος τὴν σφετέρην πλεονεξίην ἀποστείλῃ ‘it causes them whenever it sends its own excess to the lower parts of the body’: the verb ποιεῖ ‘causes’ is repeated at the start of successive clauses; this anaphora serves to emphasize the active role of the brain in precipitating disease-inducing flux (vividly expressed, as in 10, by the verb ἀποστέλλειν ‘send’—the brain is almost personified). The conjunction ὁπόταν ‘whenever’ implies a repeated action. The aetiology here postulated is simple: ‘excess’, sc. excess of moisture, precipitates ailments. In some other Hippocratic works, a more complex system of

alternative causation is put forward: hot, cold, dry in addition to moist.³⁷ Use of the indirect reflexive (σφετέρον) is a regular stylistic preference of the author (cf. *Nat. Pue.* 20 [7. 510 L.]).

ἕως ἀποκρίσιος ‘to the point of secretion’: Littré followed by Joly translates ‘jusqu’à excrétion’; Ermerins translates *ad secretionem* ‘to secretion’. The expression is questioned by Foesius: although he prints the transmitted text, translating *usque ad secretionem* ‘right up to secretion’, he suggests the alternative ὡς ἀπὸ κρίσιος *velut secretione*.³⁸ There is no exact parallel for the prepositional expression, but it is perhaps facilitated by the *nomen actionis*. A phrase in *Generation* comes close, ἐς ἀπόκρισιν τῆς γονῆς ‘to the point of release of sperm’ (*Genit.* 2 [7. 472 L.]); that work begins with an account of how seminal fluid is ἀποκριθὲν ‘separated out’ from other moisture in the body (*Genit.* 1 [7. 470 L.]). In *Diseases* 4, ἀποκρίνεσθαι is linked with ἀποκαθαίρεσθαι to express bodily purging of a greater or lesser, proper or improper, amount (*Morb.* 4. 46, 51 [7. 572, 584 L.]). The physiology implicit here is there expounded explicitly in a lengthy and complex account of the onset of illness, precipitated by agitation of the elements in the body (blood, bile and phlegm being more significant than water, as water is antagonistic to fever).

There are many examples of both substantive ἀπόκρισις and verb ἀποκρίνεσθαι used to indicate the voiding (without implication of coction) by secretion or excretion, of body matter, especially fluids. In *Nutrimēt*, allowance is made for ἀποκρίσεις κατὰ φύσιν ‘natural secretions’ (as here in *On Glands*), including urine, sweat and mucus, but also for ‘unnatural’ ones (*Alim.* 17 [9. 104 L.]). In *Regimen* 4, both the substantive and the cognate verb ἀποκρίνειν are used of a range of secretions pre-saged by dreams. These are variously ‘moist and phlegmatic’ or (a dangerous case) involve ‘excess’ and ‘a bilious secretion’ (*Vict.* 4. 89, 93 [6. 646, 660 L.]). Similarly in *Regimen* 2 retention of food in the body is opposed to removal outside it (*Vict.* 2. 40 [6. 536 L.]) and, just as in *Generation* (*Genit.* 2 [7. 472 L.]), the term ἀπόκρισις is applied also to emission of semen (*Vict.* 2. 58 [6. 572 L.]). In *Regimen* 3 such secretions as mucus and saliva are repeatedly associated with πλησμονή ‘excess’ (*Vict.* 3. 70, 77 [6. 608, 620 L.]). The underlying principle, that movement causes change and that change in a homogeneous or a blended whole results in the

³⁷ For examples see Craik, 1998, 131–132.

³⁸ Foesius, 1595, 325, n. 25.

secretion or separation of part of it, is seen in *Ancient Medicine*: *τάραχος τε καὶ ἀπόκρισις* ‘disturbance and separation’ can change the stable mix of the body’s components (VM 14 [1. 604 L.]); in *Nature of Man*, the separation of one humour from others is similarly envisaged (*Nat. Hom.* 4 [6. 40 L.]).

These medical ideas are derived from fundamental principles of Presocratic cosmology: Anaximander related the development of the *kosmos* to separation from the void; Anaxagoras explained genesis as nothing other than separation and separation as arising from motion; similar concepts can be seen in Empedokles and Demokritos (Anaximander, DK 12 A 10; Anaxagoras, DK 59 B 4, 6, 13; Empedokles, DK 31 B 9; Demokritos, DK 68 B 167).³⁹

δι’ ὧτων κατὰ φύσιν, δι’ ὀφθαλμῶν, διὰ ῥινῶν· τρεῖς οὗτοι· καὶ ἄλλοι δι’ ὑπερώης ἐς φάρυγγα, ἐς στόμαχον· ἄλλοι διὰ φλεβῶν ἐπὶ νωτιαῖον, ἐς τὰ ἰσχία, οἱ πάντες ἑπτὰ ‘natural fluxes ... by the ears, by the eyes and by the nose: these three. There are others by the palate to the trachea and to the oesophagus. There are others by the vessels to the spine and to the hips: seven in all’: the fluxes are baldly enumerated in an abrupt and telegraphic shorthand expression, where the phrase *κατὰ φύσιν* ‘naturally’ serves the preceding noun (ears) and also the following nouns (eyes and nose). However, the account is above all clear with the use of prepositions indicating the different routes (*διὰ*) and destinations (*ἐς*, *ἐπὶ*) of flux, and with emphatic repetition of important numerals: three linked fluxes then two pairs of fluxes making seven in all. *ἰσχία* ‘hips’ is Littré’s palmary emendation of *αἷμα* ‘blood’, evidently wrong but unquestioned by early editors and translators.⁴⁰ The routes and ordering in the fluxes delineated here closely resemble those put forward in *Places in Man* and *On Flesh* (*Loc. Hom.* 10 [6. 294, 296 L.]; *Carn.* 16 [8. 604 L.]). The two routes via the palate have two destinations, implicitly indicated: to chest (by trachea) and to belly (by oesophagus). The same routes are indicated in Thucydides’ narrative (Th. 2. 49) of the insidious progress of the plague through the body.⁴¹

³⁹ See Lonie, 1981, 84, 99 etc.; Schiefsky, 2006, 249–250.

⁴⁰ See for instance Burnet, 1685.

⁴¹ See Craik, 2001, at 105.

XII

The sequence of thought is hard to understand, but some help comes from 7 above, where a contrast between the effects of bile and of phlegm is implicit. Here too this is the central contrast: bile is implied in the terms ‘pungent’ (twice), ‘corrode’ and ‘stung’; phlegm is implied in words of ‘superabundance’. The subject is noxious flux from the brain, and the sequence of thought is as follows: if peccant matter is not expelled from the brain, the brain suffers; similarly in the rest of the body matter lodged inside causes trouble; but if peccant matter is expelled from the brain, there is ulceration from flux; if the flux is copious there is no relief until it is eliminated outside or absorbed inside the body; moisture causes ulceration and illness; failure to address these two conditions (of inner and outer flux or perhaps of body and brain) brings twin problems (from bile and phlegm); the effects on the brain are in the first case mental derangement which may lead to speechlessness and ‘apoplexy’ and in the second case milder mental disorder with hallucination.

Once again, an antithetical stance with μέν ... δέ and the more emphatic μέν ... ἀλλά is favoured and further contrasts are made throughout: brain ~ rest of body; fluid staying in the body ~ fluid expelled from the body; serious ~ less serious brain affections. The tone is confident and magisterial: general truths are being presented (in conditional sentences—see below). Compound verbs are throughout carefully chosen to convey a precise sense. Although the exposition has a tangential stream-of-consciousness air to the modern reader, its original intent was doubtless clarity: while an individual interpretation of current medical theories is apparently being essayed, the essence of the theories would be familiar to a contemporary knowledgeable readership.

1. οὗτοι τοῦ τε ἐγκεφάλου λύματά εἰσιν ἀπιόντες ‘these fluxes are impure matter going off from the brain’: construe οὗτοι sc. ῥόοι ‘fluxes’ from the preceding exposition, in agreement with ἀπιόντες ‘going off’ following; λύματα ‘impure matter’ is the complement of the verb. The asyndeton is striking, marking an important conclusion. The particle τε is emphatic, indicating a phenomenon of general or habitual occurrence (DGP 496–497; 520–521). The reading of V, λύματα, is glossed by Erotian (Λ 24) λύματα· καθάρματα.⁴² Although this substantive in the tra-

⁴² See Nachmanson, 1917, 450.

dition is an odd *hapax*, it is apparently verified by Erotian's gloss and would be in line with the author's penchant for poetic and colourful language. However, the emendation λημία might be suggested, to substitute a common medical term, usually applied to 'rheum' from the eyes, but with a wider semantic range.⁴³ In that case, we would be dealing with a very early (before Erotian) corruption of λημία to λύματα.

καὶ εἰ μὴ ἀπίοιεν, νοῦσος αὐτῷ 'and if they did not go off, it would have an ailment': two further compounds of the verb ἵεναι (εἶμι) 'go' follow in quick succession: ἐπίεναι 'advance' (cf. also ἐπιρρεῖν 'flow onwards') and κατίεναι 'go down', all used of fluid motion in the body. At the same time, the verb ἵεναι (ἵημι) 'send' is seen in the compound προϊέναι, synonymous with ἀποπέμπειν or ἀποστέλλειν 'send out' and the opposite of ἐσδέχεσθαι 'take in' of the body's action on fluids. The first condition in the form εἰ with optative in protasis and indicative (understood) in apodosis is immediately followed by two further conditional sentences. The second has the form ἵν with subjunctive in protasis and indicatives in apodosis; the third has the same form as the first, but with indicatives expressed in apodosis. These express general truths in present (ἵν with subjunctive) or past (εἰ with optative) time, and are almost equivalent in sense to ὅτε or ὅταν clauses (GMT 170–171, sections 462–463). The author's stylistic peculiarity of using in a first protasis εἰ and the optative, and in a second ἵν and the subjunctive is marked throughout his oeuvre.⁴⁴ There is once again an ellipse of inessential expression (the verb 'to be') in the rapid exposition; 'it, *sc.* the brain, (would have) an ailment' or, more emphatically, 'this would mean an ailment for the brain itself'.

οὕτω δὲ καὶ τῷ ἄλλῳ σώματι, ἥν ἐς τὰ ἔνδον ἀπίωσι καὶ μὴ ἔξω, καὶ αὐτοῖς ὄχλος πολὺς, κἄνδοθεν ἐλκοῖ 'in the same way, in the rest of the body, if they go off inside and not out, it both gives them (*sc.* sufferers) much trouble and it ulcerates inside (the body)': the author formulates general rules of wide applicability. Noxious matter retained ἔνδον 'inside' instead of being expelled ἔξω 'outside' always causes trouble. V's αὐτοῖς (αὐτοῖσιν Joly) need not be understood as 'through them', *sc.* the fluxes (*pace* editors); rather it refers to the brain(s) of sufferers, by an easy

⁴³ See Craik, 2006, 61–62.

⁴⁴ See Regenbogen, 1950, repr. 1961, 192–194; discussed also Lonie, 1981, 49.

switch from singular αὐτῷ to plural. Foesius' emendation αὐθις 'again' provides a contrast 'there is again much trouble', apt in context but unnecessary. ὄχλος 'trouble' is a word of disease favoured in *Diseases of Women* (*Mul.* 1 and 2), in some books of *Epidemics* (*Epid.* 4, 5, 6, 7) and also in *Articulations*. The subject of ἐλκοῖς is ὄχλος 'trouble', or a loose unspecified 'it', tr. 'there is ulceration'. Ulceration is closely associated with φύματα 'pustules' and suppuration generally, viewed as key symptoms in glandular troubles (2.1). The same verb reappears twice in the immediately ensuing description of flux pathology. (But see *app. crit.* for some scribal confusion, as the verb is below mistaken for a substantive; also for some editorial intervention, as the verb ἔλκω 'draw', which is used elsewhere in the work of the body attracting fluids but which is inappropriate here, is read in place of the verb ἐλκόω 'ulcerate'.)

ταῖς ἐπιρροαῖς ἐσθίει καὶ ἐλκοῖ 'it corrodes and ulcerates by its streamings': Joly, following Littré, translates 'voies', but elsewhere the word is applied to fluids, such as blood, in motion (*Fract.* 4 [3. 430 L.]).

καὶ τὸ μὲν ἐπιὸν ἦν ἡ πληθὺς κατιὸν ἁλές, οὐκ ἀνέχει ὁ ῥόος, ἔστ' ἂν ἐξαρούηται τὴν πληθὺν τοῦ κατίοντος 'and if the advancing matter is a superabundance going down in a rush, the flux does not let up until it (sc. the body) drains the superabundance of matter going down': there is *variatio* both in the two cognate substantives, πληθὺς and πληθὺς, and in the two participial expressions expressions (accusative in agreement with first substantive; substantival neuter, genitive, following the second); also in the contrasted verbs ἐπίεναι and κατίεναι. In the verb ἐξαρούεσθαι (with Ermerins' slight adaptation of Littré's palmary emendation to ἐσαρούεσθαι) the important concept of bodily drainage, implicit throughout the work, is here more explicitly expressed.

καὶ τὸ μὲν ἐπιρρέον ἀποπέμπων ἔξω, ἕτερον δὲ ἐσδεχόμενος, ἐς τὸ ὅμοιον αἰεὶ καθιστάμενος 'sending (some of) the matter flowing on-wards outside (the body), while taking some other of it (inside), always returning to the same state (as before)': the contrast, economically expressed and reinforced by μὲν ... δέ, continues between inside ~ outside and accepting ~ despatching. The implication of 'the same state (as before)' is a state of good balance (epitomized in such terms as σύμμετρον, 7.2), as opposed to bad imbalance (described in such terms as κέρος, πλεονεκτεῖν, 7 or πληθὺς and πληθὺς here).

τά τε ὑγρὰ ἐλκοῖ καὶ ποιεῖ νούσους ‘moisture ulcerates and causes ailments’: this general statement, somewhat at odds with the detailed content in the surrounding context, is a summing up of an important recurrent concept. As noted above, ἐλκοῖ is to be preferred to ἔλκει.

2. ἄμφω δὲ ἐν ἀκηδίῃ καταγυιοῖ τὴν φύσιν ‘both (types of flux) if neglected weaken the constitution’: the form of the verb is singular, as ἄμφω represents a neuter plural subject, referring to both types of moisture in flux. The language is novel and arresting: both the verb καταγυιώω and the substantive ἀκηδία (ἀκήδεια) are rare. The former occurs in the HC only here and once in *Acute Diseases*; the latter, occurring only here, exemplifies the author’s predilection for unusual alpha privative formations and idiosyncratic coinages (lit. ‘in lack of care’). Such comments on an adverse outcome where a condition is untreated, or not properly treated, appear in the work of confident practitioners, as especially in *Fractures* and *Articulations* and in some passages of *Epidemics*; also *Affections*.

καὶ ἢν πάθῃ, δὴ ἐστὸν κακία ‘and if it is affected, there are two evils’: the dual number (relatively rare in the HC but more favoured in the gynaecological works) stresses that these two bad outcomes are inextricably linked, being caused by two related types of flux. The φύσις ‘constitution’ (of the body) is an important topic in this section and is probably the intended subject of the brief conditional clause; alternatively, with personal subject, ‘if one is affected’.

τὰ μὲν γὰρ πάθη τῆς φύσιος [οἱ προειρημένοι ῥόοι] ‘first, with regard to constitutional affections [the aforementioned fluxes]’: there may be a deep-seated corruption here. The entire expression, but especially the reference to flux, seems out of place. Below, ‘apoplexy’ is a named affection; here the usage is strangely general. In addition, we expect πάθεα, not πάθη a form suggestive of a gloss (see on 14). At the same time, it is characteristic of the author to refer back to the content of his exposition; ‘aforementioned’ is in accord with his tendency to recap.

δυσφορέουσι τὸ πλῆθος, καὶ ὁδάζονται τὸ ἄλογον καὶ οὐ σύνηθες ἔόν ‘they (sc. sufferers) do not tolerate superabundance well and are irritated by the inexplicable and unaccustomed’: the change from singular subject of the preceding clause, καὶ ἢν πάθῃ ‘if it is affected’, to plural subject of the ensuing verbs is loose, but readily understood. Two types of bodily

affliction are suggested, one from excess (quantity, phlegm) and the other from strangeness (quality, bile) of bodily moisture. The verb ὀδάξομαι recurs in 13; elsewhere in the HC it is found only in *Diseases of Women* 2, applied to dressings which will not irritate the patient (*Mul.* 2. 160 [8. 338 L.]). The latent metaphor is of ‘biting’ or ‘stinging’, cf. δάκνειν (as below), and an association with δριμύ ‘pungent’ is recurrent.

ὁ δὲ ἐγκέφαλος πῆμα ἴσχει καὶ αὐτὸς οὐχ ὑγιαίνων ‘second, the brain has a problem, it too being unhealthy’: until this point, concern has been with two types of flux from the brain, both unhealthy; it now becomes clear that the brain can be affected if flux does not take place. The verb ἴσχειν (repeated) is reduplicative form of ἔχειν.

εἰ μὲν δάκνοιτο ... ἀλλ’ ὅτε δριμὺ μὲν οὐ ... πληθὺς δ’ ἐόν ... ‘if it is stung ... but if the flow does not cause a pungent sensation but ... being superabundant’: there is a double antithesis in this short passage. The first has the emphatic form εἰ μὲν ... ἀλλ’ ὅτε ... while the second is regular μὲν ... δέ. On the form of the condition (optative in protasis, indicative in apodosis), here answered by a temporal clause introduced by ὅτε, see above. On the strongly adversative antithesis μὲν ... ἀλλά, see on 8 above, with DGP 6.

τάραχον πολλὸν ἴσχει, καὶ ὁ νοῦς ἀφρονεῖ καὶ ὁ ἐγκέφαλος σπᾶται καὶ ἔλκοι τὸν ὅλον ἄνθρωπον ‘it is prone to much disturbance, the mind loses reason and the brain suffers spasm and ulcerates the person as a whole’: the substantive τάραχος in the sense of mental disturbance is echoed in the ensuing cognate verb ἡ γνώμη ταράσσεται ‘the intellect is disturbed’. As emendation of V’s meaningless ἔλκη editors have proposed ἔλκει the third person singular of the present indicative of ἔλκω ‘drag’; ἔλκοι the third person singular of the present indicative of ἔλκω ‘ulcerate’ gives preferable sense. For scribes subject to etacism, pronunciation of all three forms would be the same. A conjunction between ‘spasm’ and such mental disturbance as ‘mania’ or ‘apoplexy’ is apparent in other texts, most notably in *Aphorisms*. Patients οὐ μάλα σπῶνται οὐδὲ μαίνονται ‘are less likely to suffer spasm and madness’ if swellings on wounds remain, rather than suddenly disappearing (*Aph.* 5. 65 [4. 558 L.] = *Epid.* 2. 3. 18 [5. 120 L.]); the presence of black bile (in ‘melancholic’ conditions) is associated with such dangerous outcomes as apoplexy, spasms, madness and blindness (*Aph.* 6. 56 [4. 576 L.]); in cases where speech fails or there is an apoplectic seizure, ‘melancholic’ disease is indicated (*Aph.*

7. 40 [4. 588 L.]; cf. also *Loc. Hom.* 39 [6. 328, 330 L.]).⁴⁵ There is a possible connection between spasm and loss of mental function, expressed as here by the verb ἀφρονεῖν, in *Diseases 2* (*Morb.* 2. 54 [7. 82 L.]).⁴⁶ The notion that a preponderance of bile over phlegm can cause ‘madness’ is seen also in the Aristotelian *Problemata*: where residual ‘bilious humours’ become overheated, fever results and some cases of madness, if black bile is present as this ἐπιπολάζει, ἀναξηραινομένων τῶν ἐναντίων χυμῶν ‘surfaces, the opposite humours being dried up’ (*Arist. Probl.* 1. 12, 860b23–25). There is a similar nexus of ideas in *Regimen 4*: where there is heat and secretion of bile, there is a danger of ‘madness’ (*Vict.* 4. 89 [6. 648 L.]).

ἐνίστε δ’ οὐ φωνέει καὶ πνίγεται ‘sometimes he is speechless and chokes’: inability to utter is a symptom of a shocked state already in Homer (*Il.* 17. 695). Erotian (A 23) glosses ἄναυδος· ἄφωνος. αὐδὴ γὰρ ἡ φωνή. Both terms occur in the HC, especially in gynaecological texts.⁴⁷ Sudden onset frequently characterises the onset of the condition in the ἄφωνος (*Nat. Mul.* 3 [7. 314 L.]; *Mul.* 2. 127 [8. 272 L.]) or the ἄναυδος (*Mul.* 2. 151 [8. 326 L.]). Some Hippocratic accounts of aphasia suggest a passing state, typical of an epileptic or hysteric seizure; but the symptom where accompanied by other bad signs can indicate a fatal condition as in *Coan Prognoses*, describing cases where φωνὴ ἐκλείπει ‘the voice fails’ (*Coac.* 242 [5. 636 L.]). See also *Diseases 4* (*Morb.* 4. 54 [7. 598 L.]) and cf. 17 below.

ἀποπληξίη τῷ πάθει τοῦνομα ‘the name of the affection is apoplexy’: concern with nomenclature is seen in the aside, as with terms for glands at 7.1 and 16.1. The term ἀποπληξίη (usual form) or synonymous ἀπόπληξις with the related adjective ἀπόπληκτος (usual form) or ἀποπληκτικός (form favoured in *Coan Prognoses* and *Prorrhetic 1*) is paralleled by the equivalent παραπληγίη, παράπληκτος (especially in *Epidemics*) and, in addition, the symptoms of the condition (sudden loss of sight, speech, movement) fit the pathology attributed to the βλητός (as *Morb.* 3. 3 [7. 120 L.]). These terms may all relate to the visible effects of stroke, presented in *Airs, Waters and Places* (through excessive trust in overarching theories) as an affliction of ‘phlegmatic’ populations but also (through

⁴⁵ See Craik, 1998, 195–197.

⁴⁶ Jouanna however emends ἀφρὸν ἰεῖ. See Jouanna, 1983, 261, n. 2.

⁴⁷ Gourevitch, 1983, argues for a difference in sense, but the suggested distinction is rather artificial.

correct observation) as affecting primarily older people (*Aer.* 3 [2. 18 L.]). Aphoristic texts pay particular attention to such ‘apoplectic’ conditions. It is recognized that they vary in severity, sometimes slight, affecting speech or manual dexterity; sometimes serious and causing death (*Coac.* 353, 490 [5. 658, 695 L.]). Diokles too regarded the aetiology as phlegmatic (Diokles fr. 95, van der Eijk).⁴⁸

καὶ ἡ γνώμη ταράσσεται, καὶ περίεισιν ἄλλοῖα φρονέων καὶ ἄλλοῖα ὀρέων, φέρων τὸ ἦθος τῆς νούσου σεσηρόσι μειδιήμασι καὶ ἄλλοκότοισι φαντάσμασιν ‘the intellect is disturbed and (the sufferer) survives disordered in thinking and disordered in seeing, tolerating the nature of the malady with gaping grins and strange visions’: Galen glosses σεσηρός· τὸ ἐκτετραμμένον καὶ διεστηκὸς ἐπὶ πλείστον τοῖς χεῖλεσιν, ὅπερ καὶ ἐκπεπληγμένον ὀνομάζεται ‘everted and parted, especially with reference to the lips—what is called also “startled”’ (*linguarum seu dictio-num exoletarum Hippocratis explicatio*, 19. 137 K.). This is probably a gloss on a passage of *Fractures* where a lesion is described in a hendiadys as σεσηρός καὶ ἐκπεπληγμένον ‘gaping apart’ (*Fract.* 32 [3. 532 K.]). In this case the Galenic text is corrupt, ἐκπεπληγμένον ‘startled’ appearing in place of ἐκπεπληγμένον ‘gaping’ through easy substitution of the perfect participle of the common verb ἐκπλήττομαι for that of the rare verb ἐκπλίττομαι (cf. *Prorrh.* 2. 24 [9. 56 L.]). Cases where laughter is a symptom are regarded as less dangerous (*Aph.* 6. 53 [4. 576 L.]).

The language used to describe this second condition is paralleled by the account in *Sacred Disease* of the paramount importance of the brain, source of emotions (pleasure, sorrow) and seat of faculties (sight, hearing). Through the brain φρονέομεν ‘we reason’; but also παραφρονέομεν ‘we lose reason’ and μαίνομεθα ‘we become mad’ (perhaps significantly ὑπὸ ὑγρότητος ‘through an excess of moisture’). Irrational fears by night and day and ἄλλοτε ἄλλα ὄραῖν καὶ ἀκούειν ‘fantastic sights and sounds’ are noted (*Morb. Sacr.* 17 [6. 392 L.]). It is somewhat reminiscent too of an Empedoklean description of dream experience as τὸ φρονεῖν ἄλλοῖα ‘being disordered in thinking’ (DK 31 B 108 = Arist. *Metaph.* 1009b18). However, a passage in *Diseases of Girls* (by the same author: see Introduction II) is even closer: ἀπόπληκτοι are discussed in terms of their terrors leading to παραφρονεῖν ‘loss of reason’, through φαντάσματα ‘visions’ of hostile supernatural powers (*Virg.* 1 [8. 466 L.]).

⁴⁸ See the illuminating note on ancient understanding of the condition, van der Eijk *ad loc.*

Remarkably, the description falls into a metrical sequence where the pattern anceps plus choriamb (hereafter ‘unit’) is repeated. Poetic diction is marked (e.g. ἄλλοῖος) and the devices of anaphora and internal rhyme in the initial verse are striking; the word τὸ ἦθος applied to a disease is unexpected, perhaps a consciously paradoxical substitution for the regular, indeed ubiquitous, πάθος *metri gratia*. ἄλλοῖα φρονέων καὶ ἄλλοῖα ὀρέων (allowing for crasis after καί, as is common, and treating the participial forms as uncontracted, as is regular Attic) comprises unit twice repeated; φέρων τὸ ἦθος τῆς νόσου (treating νόσου as regular Attic νόσου) is simply an iambic dimeter; σεσηρόσι μειδιήμασι καὶ comprises unit twice repeated; ἄλλοκότοισι φαντάσματοςιν is a single choriamb followed by a final dochmiac metron. (Greek lyric metre is fluid in character, and choriambic sequences especially so. Although the unit recurrent here is not regularly found, it is akin to such common patterns as glyconic, reizianum etc. An association between runs of choriambic and runs of iambic is very common. And a dochmiac metron is commonly employed as clausula to any sequence.) The snatch of lyric metre is unexpected. The author, who is given to flowery forms of expression may simply be showing off a virtuosity extending to poetic composition. Or this may be a quotation lifted or adapted from a lyric poem, or from tragic lyric, describing the situation of some hero (such as Herakles, Ajax, Orestes) who went mad. There may be an analogy in ‘an odd parallel’⁴⁹ between a sentence in *Diseases* 4 (*Morb.* 4. 34 [7. 546 L.]) and a passage of the Sophoclean *Oedipus Coloneus* (S. *OC* 694–698). And the grandiloquent aphoristic assertion at the beginning of *Generation* is hexametric, corresponding to the second half of a line, νόμος μὲν πάντα κρατύνει ‘law governs all things’ (*Genit.* 1 [7. 470 L.]). See Introduction II for the possible implications of this.

XIII

Three of the seven fluxes, those to eyes, to nose and to ears, are dismissed. These are easy to observe, and not serious. That to the ears is most troublesome of the three. The term ‘ophthalmias’ is used of eye affections; no specific term is used of nose and ears. Swelling and irritation are characteristic initial symptoms; in serious cases suppuration supervenes.

⁴⁹ So Lonie, 1981, 273; cf. also 103 and n. 25.

1. ἀλλ' οἷς ῥόος ἐπ' ὀφθαλμούς 'but in people with flux to the eyes': as the author is returning to discuss individually the fluxes (listed, 11), after an excursus on the brain (12), introductory ἄλλος 'another' (the reading in V) is inappropriate. ἀλλ' οἷς (the simple emendation proposed) corrects this anomaly and further removes an awkward asyndeton. ἀλλά has its regular adversative sense: after outlining serious conditions seated in the brain, the mild cases of flux to eyes, ears and nose are addressed. The corruption is readily explicable in view of the proximity of ἄλλοι ... ἄλλοι (11), ἄλλοτε ... ἄλλοι ... ἄλλοι ... ἄλλοκότοισι (12), ἄλλοι ... ἄλλη νοῦσος (14). The sense is improved also in that the three linked fluxes are all discussed in terms of sufferers and their symptoms.

ὀφθαλμῖαι, καὶ οἰδέουσιν αἱ ὄψεις '(there are) ophthalmias, and the seeing parts swell': Ermerins deletes ὀφθαλμῖαι as a superfluous gloss, but it is in line with the author's evident interest in nomenclature not only as here, nosological (terms for different affections 12.2, 14.1) but also anatomical (terms for different glands 7.1, 16.2). The term ὀφθαλμία is used both of a specific eye ailment (Lat. *lippitudo*) and of a general adverse pathology. The term ὄψις is regularly used of the central 'seeing part' of the eye, iris with pupil.⁵⁰ Swelling and inflammation are the most frequently described symptoms in such affections.

εἰ δὲ ἐπὶ ῥίνας ὁ κατάρροος, ὁδάξονται μυκτῆρας 'and if the downward flux (is) to the nose, they (sc. sufferers) feel irritation in their nostrils': 'catarrh' is a common mistranslation of κατάρροος, a term which has a wide general reference to any flux down from the head to another part of the body. It retains this sense in the title of many renaissance works *de Catarrhis* 'On fluxes', including that of Schneider challenging the existence of internal routes from upper to lower body.⁵¹ The subject of ὁδάξονται (cf. on 12.2) is personal, sc. sufferers, and μυκτῆρας is accusative of respect.

καὶ ἄλλο οὐδὲν δεινόν 'and there is no other harm': nasal flux (the common cold) is generally regarded as trivial. It is accorded little space in the treatment of seven fluxes in *Places in Man* (*Loc. Hom.* 11 [6. 296 L.]) and similarly dismissed as something δῆλον 'clear' or φανερόν 'obvious', 'evident' in *Ancient Medicine* (VM 18 [1. 612 L.]). The adjective δεινός has

⁵⁰ See Craik, 2006, 3–4 and 104–107.

⁵¹ Schneider, 1660 and 1664.

a wide semantic range—fearful, awful, dangerous, skilful, clever—and in medical texts is frequently found negated, applied to symptoms or cases not viewed as serious (*Morb.* 4. 54 [7. 598 L.]; *Prorrh.* 2. 12 [9. 34 L.]; Littré translates ‘rien de fâcheux’). These three fluxes are contrasted with those discussed in the next section, where even the best medical intervention is useless. There may be a reminiscence here of the first stasimon in Sophocles’ *Antigone*, a lyric celebration of human progress, including medical progress; this begins on a positive note, πολλά τὰ δεινὰ, and ends with the sombre acknowledgment that death is ineluctable (*S. Ant.* 332–375).

αἶ τε γὰρ ὁδοὶ τούτων εὐρέες καὶ ἱκαναὶ τιμωρεῖν σφίσι ‘for the nasal passages are broad and able to give themselves relief’: reasons for the unimportance of flux to the nose are here put forward: the nasal passages (ὁδοί an ordinary word used in a semi-technical sense, as is πόρος of the ear’s ‘passage’ below) are broad and can look after themselves: for the unusual verb and personification of a part of the body, cf. 10; this is in accord with the notions advanced in 9 in terms of advantage (πλεονεκεῖν and κέρδος) that different parts might strive for supremacy.

πρὸς δὲ καὶ ἀσύστροφον τὸ ἀπὸν αὐτῇσι ‘furthermore, what goes off (= issues) from them is really not prone to coagulate’: with typical didactic thoroughness, a further reason is adduced: nasal mucus is ‘not prone to coagulate’. The adjective, occurring only here, is an unusual but not unparalleled formation: ἀσύμφορος and ἀσύμπτωτος are similar. The author’s liking for alpha privative formations can be seen especially in such novel forms; other examples are ἀνεπιτηδεῖος (*Morb.* 4. 52 [7. 590 L.]) and ἀκίνδυνος (*Nat. Pue.* 18 [7. 506 L.] and *Mul.* 1. 72 [8. 152 L.]); the latter is lost in some mss, through unfamiliarity to scribes.

2. τὰ δὲ οὖατα σκολιὸς μὲν πόρος καὶ στενός ‘but in the ears, the passageway is slanting and narrow’: similar descriptions are to be found in *Places in Man* and *On Flesh* (*Loc. Hom.* 2 [6. 278 L.] and *Carn.* 16 [8. 604 L.]).⁵² Joly’s emendation of V’s οὖατα to ὄτα is unnecessary.

ὁ δ’ ἐγκέφαλος πλησίον αὐτοῦ αὐτοῖσιν ἐμπιέζεται ‘and the brain, in proximity to it’ (αὐτοῦ the passage, singular noun preceding), ‘presses

⁵² See Craik, 1998, 103.

on them' (αὐτοῖσιν the ears, plural noun preceding): Ermerins emends αὐτοῦ to ἐών 'being' and it is true that the repetition of the pronoun in oblique cases is awkward, also that there is an ugly hiatus, and that the reference not entirely clear; however, such usage is characteristic of the piece and of early prose in general. The concept of pressure causing bodily impaction and blockage is seen also in *Places in Man*; there the simple verb πιέζειν 'press' and the compound συμπιέζειν 'press together' correspond to ἐμπιέζειν a typically precise compound, 'press on' used here (*Loc. Hom.* 9 [6. 292 L.]).⁵³

νοσεόντων δὲ τὴν νοῦσον ταύτην, τὰ πολλὰ ἀποκρίνεται καὶ [τὸ οὖς] ἀπὸ τῆς πυκινῆς ῥοῆς ἀνὰ χρόνον κεχώρισται τε καὶ ῥεῖ δυσώδεις πῦον 'when people suffer from this malady, matter is secreted for the most part and [the ear] through time malodorous pus is separated and flows from the dense stream': the transmitted text is corrupt in several ways. First, V's ὠρίσται is clearly wrong. The expedients of Foesius ὠρύνεται 'excavated', 'perforated'; of van der Linden ὀρίνεται 'stirred', 'excited'; and of Littre ὠρίσται 'filtered' are ingenious but fanciful in sense. Here, with Ermerins, κεχώρισται 'separated' is read. This is palaeographically easy and also fits the context perfectly: pus is secreted and eliminated; for the conjunction of separation and secretion a passage in *Ancient Medicine* may be compared (VM 16 [1. 608 L.]; cf. 14 [1. 604 L]). Secondly, V's active ἀποκρίνεται is emended to passive ἀποκρίνεται (palaeographically easy, in view of καί immediately following) and thirdly τὸ οὖς is deleted as an intrusive gloss. The verb ἀποκρίνεται and substantive ἀπόκρισις are ubiquitous in Presocratic usage, expressing thoughts about many different phenomena: Anaxagoras especially but also Anaximander, Demokritos, Empedokles and Parmenides had recourse to such physical concepts.⁵⁴ See also on 11 above.

οὕτως ἐς τὰ ἔξω δῆλοι τῷ ὀφθαλμῷ ῥόοι καὶ οὐ πάμπαν θανατώδεις 'thus, fluxes outside (the body) are clear to the eye and are not at all life threatening': relatively harmless matter in flux, expelled from the body naturally and visibly by its orifices, is contrasted with harmful matter lingering inside invisibly, 14 following, as 12 above.

⁵³ Cf. Craik, 1998, 134.

⁵⁴ On construction of the verb in *Nature of the Child*, see Giorgianni, 2006, 250–251.

XIV

Four further fluxes are discussed: one via the oesophagus to the belly, one via the trachea to the lungs and two via the vessels to the joints of the sacrum and the hip. The range of the author's medical interests is here evident. Although the treatise is primarily theoretical, pragmatic and empirical elements, such as prognosis and therapy, have a place also.

1. ἦν δὲ ὀπίσω τὸ ῥεῦμα ἦ (καὶ ἦ) δι' ὑπερώης τὸ ἀφικόμενον φλέγμα ἐς τὴν κοιλίην, ῥέουσιν μὲν καὶ αἱ κοιλίαι τούτων, νοσέουσιν δὲ οὐ 'if the flow is behind and the arriving phlegm goes by way of the palate to the belly, the bellies of these people flow indeed, but they are not ill': Ermerins' minor alteration to V's text (ἦ in place of ἦ) helps to restore the faltering syntax to an acceptable level: ἦ 'goes', 'reaches' is required before the preposition ἐς instead of ἦ 'is'. But if, as here suggested, V's reading ἦ 'is' is retained with the addition of (καὶ ἦ) 'and goes', the sense is still further improved.

The word order puts stress on the initially placed ὀπίσω 'behind': this refers to the oesophagus (carrying flux to the digestive system, as above 11 ἐς στόμαχον), which is situated behind the trachea (carrying flux to the lung, as above 11 ἐς φάρυγγα and here below ἐπὶ φάρυγγα). Different words are used in different texts for these routes, but the parallelism is standard (*Loc. Hom.* 10 [6. 294, 296 L.]; *Carn.* 16 [8. 604 L.]; Aias or Abas, Anon. Lond. VIII. 35–44).⁵⁵ Phlegm here twice said to be the matter of belly flux is immediately afterwards mentioned in relation to the lung also. Although phlegm is not elsewhere specified, it may be regarded not as peculiar to flux by this route (the palate) but rather as the regular or most common stuff of flux. Glands are like phlegm (1) and φλεγμονή is static moistness (7.3, cf. 17.1 and use of the verb φλεγμαίνειν, 7.3 *bis*, 8). Belly flux is not an illness unless the phlegm lingers, giving rise to serious problems: this is expressed clearly by a μὲν ... δέ contrast.

ἀλλὰ μένοντος κάτω τοῦ φλέγματος εἰλεοὶ [τὰ πάθη χρόνια] 'but if the phlegm remains below there are "twisters" [the affections are chronic]': Ermerins' emendation ἀλλὰ μένοντος (conjunction required to give connection) is substituted for V's ἀναμένοντος. The expression is particularly abrupt, with the common ellipse of the verb 'to be' here rather

⁵⁵ See Craik, 1998, 137–138; also, on parallels in Thucydides' plague narrative, Craik, 2001, 105.

awkward. This suggests original writing in the form of notes, lacking more than light revision.

Elsewhere in the HC εἰλεοί, here translated ‘twisters,’ is a serious and acute condition, marked by high fever (*Morb.* 3. 14 [7. 134, 136 L.]; *Prorrh.* 1. 158 [5. 568 L.] = *Coac.* 197 [5. 626 L.]). As the condition is generally acute, not chronic, Littré objects to τὰ πάθη χρόνια and takes that phrase with the ensuing discussion of chest flux; certainly it would be an apposite explanation of such chest conditions as *phthisis*. It may be suspected rather that the phrase is an intrusive gloss, especially as we expect the form πάθηα, not πάθη. As with other baldly presented passages of *On Glands*, the content here can be understood in the light of the author’s lengthy exposition in *Diseases* 4 (*Morb.* 4. 49 and 52–53 [7. 578 and 590, 592, 594 L.]). Although the text is uncertain in places and the detail is not entirely clear, the ideas are simple in outline: a condition is described where moisture (τὸ ὑγρόν) in a turbulent pathological state can either go to the belly and be more or less harmlessly eliminated by the bowels; or, failing that outcome, can find space (εὐρυχωρίῃ) elsewhere in the lower body and lingering below (κάτω), cause much trouble by an activity expressed over and over again by the verb εἰλεῖσθαι, sometimes opposed to στηρίζειν ‘settle’. The verb (εἴλω, εἰλέω ‘shut in’; but also ‘turn around’, possibly Lat. *volvo*) has a wide semantic range, difficult to explicate in this context. Lonie translates ‘range about’; Joly following Littré has ‘tourbillon’ and ‘tourbillonner’. Similarly, *eilioi* is a condition—a range of symptoms rather than a particular disease—hard to define. There may be a root sense of internal obstruction and this would be in accord with the general principles of the postulated pathology of flux and fixation, blockage being generally a cause of trouble; but in addition it seems to carry the sense of ‘twisting’, applied perhaps to the source of griping pain. In any case it is evident that the verb in *Diseases* 4 refers to the same condition as the substantive in *On Glands*. The translation ‘twisters’ aims to be descriptive, according to the derivation.⁵⁶

ἄλλοισι δι’ ὑπερώης ἐπὶ φάρυγγα, ἣν πολὺ ῥυῆ καὶ ἐπὶ πολὺ, αἱ νοῦσοι φθινάδες· κορίσκονται γὰρ τοῦ φλέγματος οἱ πλεύμονες καὶ γίνεται τὸ πῦον· τοῦτο διεσθίει τοὺς πλεύμονας ‘in other cases (where it goes) by way of the palate to the throat, if there is considerable flux over a considerable time, consumptive maladies occur. For the lungs are

⁵⁶ Cf. Craik, 2006, 95 on a suggested translation of κυνάγχη as ‘the choker’.

saturated with phlegm and pus arises. This eats the lungs': the same verb κορίσκεσθαι 'be saturated' is used of the kidneys in health (6); cf. κόρος of the normal intestines (9). It seems implicit that phlegm in the body is harmless unless it is excessive, in which case pus may result (cf. διαπνίσκεται 'becomes purulent' applicable to glandular trouble located in groin, armpit or neck alike, 8). The statement that pus 'eats' the lungs is reminiscent of statements elsewhere in the work in relation to bile: perhaps it is supposed that phlegm mutates via pus into bile; but it seems more likely that the author did not sharply differentiate the two.

καὶ οἱ νοσέοντες οὐ ῥήμιον περιγίνονται· καὶ ἡ γνώμη τοῦ ἰητροῦ, καὶ ἥν ἀγαθὸς καὶ ἥν ἀγχίνους, τὰ πόλλ' ἀσυνετέει τῆς προφάσιος 'and the sufferers do not readily survive. The judgment of the doctor, even if he is good and even if he is clever, in many cases fails to grasp the cause': Littré's emendation πόλλ' ἀσυνετέει for V's πολλὰ ξυνετέειν is followed, it being supposed that, as elsewhere, word division is incorrectly managed in V. This gives an alpha privative formation, in line with the author's predilection in usage. Elsewhere in the HC, the verb occurs only in *Fractures* and *Articulations*, in three instances all referring to medical failure in understanding (*Fract.* 25, 31 [3. 498, 524 L.]; *Artic.* 14 [4. 126 L.]). A note of realism, even pessimism, is struck as the limitations of medical intervention are recognised. Comments on the difficulty of having certain medical knowledge are often coupled, as here, with stress on the importance of understanding the cause of illness, and also with criticism of other doctors' failings. In the gynaecological works—in passages probably of the same authorship and certainly from the same 'school'—these views are forcefully stated (*Mul.* 1. 34 [8. 80 L.]; 62 and 64 [8. 124 and 126 L.]; *Mul.* 2. 114 [8. 246 L.]). Our author addresses questions of causation (ἀρχαὶ τῶν νόσων) in *Diseases* 4 (*Morb.* 4. 49 [7. 578 L.]) and *Diseases of Girls* begins with an emphatic, apparently doctrinal, statement of the need to know fundamental (ἐν τῷ ἀμερεῖ) underlying causation (*Virg.* 1 [8. 466 L.]).

The importance of understanding causes (of illness, pain etc.) is often stated and is almost a medical bromide, while the term *prophasis* for a precipitating cause is almost a medical cliché. Instances are scattered throughout the HC, with a strong concentration in *Ancient Medicine* (*VM* 2, 11, 16, 22 [1. 574, 594, 606, 632 L.]). The term passed from medical to non-medical writers, as in a celebrated statement of Thucydides on the 'most true' cause of the Peloponnesian War (*Th.* 1. 23. 6).

2. διὰ φλέβων ἐπὶ νωτιαῖον ... αἰσσει δὲ ἐνταῦθα ἐπὶ ἱερὸν ὀστέον, ἄγων τὴν ἐπιρροὴν ὁ νωτιαῖος, καὶ ἐπανέθετο τῇσι κοτύλῃσι τῶν ἰσχίων 'by the vessels to the spinal fluid; there the spinal fluid rushes to the sacrum, carrying the streaming, and deposits it in the sockets of the hip joints': the spinal fluid seems at first to be the ultimate destination (use of preposition ἐπὶ) of this final flux arriving from the head by way of the vessels (unspecified); but it soon emerges that the spinal fluid acts as conveyance to the joints of the lower back and hips. This is the standard Hippocratic pathology of *ischias*, *kedmata* and *podagra*, common though ill-defined troubles of the lower joints. The description of this process is extraordinarily vivid, with personification of the spinal fluid engaged in rapid motion and action: aorist ἐπανεθετο 'deposits' expressing action just occurring as past (see GMT 18, page 60). It has been suggested that the verb ἐναποτίθεμαι is a give-away 'late' feature of the language of *On Glands*.⁵⁷ However, such precisely formed compound verbs are characteristic of the work as a whole. In addition, the language is close to a passage of *Diseases* 4, where the compound verb ἐπανερχομαι 'attack' appears and the verb αἰσσειν 'rush' is used of phlegm entering the body and the diseased process attacking the liver (*Morb.* 4. 35 and 54 [7. 550 and 598 L.]); similarly the compounds ἐξαίσσειν and ἐπαίσσεσθαι occur in *Generation-Nature of the Child* (*Genit.* 4 [7. 474 L.] and *Nat. Pue.* 17 [7. 498 L.]); also in *Diseases of Girls* the compound ἀναίσσειν is used twice, of a pathological rush of blood and of a sudden shiver (*Virg.* 1 [8. 466, 488 L.]).

The underlying theory reflects the general belief that μυαλὸς νωτιαῖος 'spinal fluid' was inherently connected with the life force (brain, semen).⁵⁸ The common pathology assigned to these joint troubles implicitly demonstrates familiarity with the complex anatomical conjunction of hip, back and pelvis: the pelvis articulates both with the two hip bones (anteriorly and laterally) and with the sacrum and coccyx (posteriorly).⁵⁹

[ἰσχία] καὶ ἣν ποιῇ φθίσιν, καὶ μαραίνεται ὁ ἄνθρωπος ὥδε καὶ ὥδε καὶ ζῶειν οὐκ ἐθέλει 'and if it causes consumption [in the hip joints], so the person actually wastes away, just like that, and he does not want to survive': the language is awkward with repeated καὶ connection, somewhat ameliorated by the suggested deletion of the initial ἰσχία (as Ermerins).

⁵⁷ Anastassiou, 1980, 308.

⁵⁸ See Craik, 2008 and 2009.

⁵⁹ See Whiten, 2006, 98, 106.

If kept, ἰσχία must be treated as an accusative of respect, ‘as to the hip joints’; but it seems probable that an intrusive gloss ἰσχίας referring to the condition has been altered slightly and wrongly incorporated. At the same time, the repetition at the beginning of a sentence of a word appearing in the previous sentence would be characteristic of the author.

ταχὺ γὰρ πονεῖ τὴν σπάθην, καὶ ἄμφω τὸ πόδε καὶ μηρὸν παρέπονται ‘for soon it causes trouble in the bone forming the joint; both feet and both thighs follow’: the osteological term σπάθη (rather awkwardly translated ‘bone forming the joint’) occurs only here in early medical writing. Later it has the sense ‘rib’ (Ruf. Oss. 25, 190 DR; cf. Poll. 2. 181) and is so translated LSJ s.v. 4. Foesius cites this passage of *On Glands* and argues for the sense *scapulae* ‘shoulder blades’. Littré objects, on the grounds that ‘ribs’ is the only sense recognised in lexica.⁶⁰ However, it is scarcely credible that the part here intended is either ribs or shoulder blades: the point is the inexorable downward descent of flux. In general usage σπάθη is used of any broad blade such as sword, oar or spatula (LSJ s.v.; cf. Poll. 10. 120, 145 etc.). In this semantic range, it resembles other terms such as πλῆκτρον, which has the original sense of something used for striking (especially the lyre) but is then applied to spear-point, spur etc. (with reference to shape, not function); as an extension of the meaning ‘spur’ it then denotes ‘an analogous bone of the ankle’ or ‘part of the thigh-joint’, LSJ s.v. 3. Pollux is specific: πλῆκτρον δὲ μηροῦ καλεῖται καθ’ ὃ ἡ κεφαλὴ τοῦ μηροῦ τῇ κοτύλῃ συνήπται ‘plektron is the name for the part of the thigh where the head of the thigh is joined to the socket’ (Poll. 2. 4. 185). Surely σπάθη is the same part, that is the narrow oblique αὐχὴν ‘neck’ attached to the κεφαλὴ ‘head’ of the femur, where it fits snugly in its socket, the part of the bone most prone to osteoporotic fracture.⁶¹ Osteoarticular tuberculosis can attack all bones and joints, most commonly the spine, but ‘tuberculous caries also can reside relatively often in the articular regions of the lower limbs’.⁶²

καὶ αἰεὶ τελέως ὄλλυνται χρόνῳ πολλῷ μελεδαινόμενοι, καὶ οὕτως ἀπνύδῃκε καὶ θνήσκει ‘and they always are lost in the end even if they are attended for a long time: he (sc. the sufferer) loses strength

⁶⁰ Foesius s.v in *Oeconomia*; Littré 570, n. 9.

⁶¹ See Whiten, 2006, 106 (diagram) and Skoda, 1988, 41 (on the terms ‘neck’ and ‘head’).

⁶² Grmek, 1989, 195.

and dies in this way': the rather jerky syntax continues throughout this part of the work. It is recognised that consumption of the back and the hips has same effects as consumption of the lungs; once again the helplessness of the doctor is conceded. Littré objects to the repetition of verbs 'to die', and prefers to regard the subject of ὀλλυνται not as personal but with reference to the feet and thighs (preceding), tr. 's'atrophient toujours complètement';⁶³ but it may be contended rather that emphasis is sought through phases of decline culminating in death. The patient 'loses strength'; the gnomic aorist (see GMT 155, p. 53) implies that past events are likely to be replicated under similar circumstances. The verb has two senses—'lose speech' or 'lose strength'—the latter evidently intended here. It commonly suggests stages of an illness, with reference especially to the 'crisis' or turning point to death or recovery (cf. *Aph.* 1. 9 [4. 464 L.]; *Epid.* 2. 1. 6 [5. 76 L.]; *Praec.* 9 [9. 264 L.]). The striking change in tense, from present to gnomic aorist, is an idiom borrowed from poetry; the Euripidean generalisation Ἔρως ... διαφθείρει τε πολλὰ καὶ ἡδίκησεν 'Love is very destructive and immoral' (E. fr. 424) can be compared. The verb μελεδαίνω 'tend', in place of the synonymous θεραπεύω, is one of the many stylistic pointers to authorship. It is common in and almost confined to the gynaecological works.⁶⁴ A passive use, similar to that here is frequently seen in our author, and frequently in the context of treatment which may, or may not, be life saving (*Mul.* 1. 25 [8. 66 L.]; *Nat. Pue.* 18 [7. 504 L.]; *Morb.* 4. 48, 49, 54 [7. 578, 580, 598 L.]). A single occurrence in *Prorrhetic* 2 suggests a tangential linguistic connection with that treatise also (*Prorrh.* 2. 1 [9. 6 L.]), in accordance with other usage observed.

ταῦτά μοι περὶ ῥόων ἀπὸ κεφαλῆς εἴρηται 'that is the end of my discourse on fluxes from the head': the didactic summing up seems a half apology for the author's return to the topic of fluxes, not totally germane to his theme of glands. But in this author, such expressions are almost automatic. The comment ταῦτά μοι εἴρηται is to be found constantly in the group as a transitional marker; successive examples abound (for example, *Nat. Pue.* 25, 26 [7. 526, 528 L.]). The words might be used equally in written or spoken discourse.

⁶³ Littré 570, n. 10; cf. 571, n. 11.

⁶⁴ See van Brock, 1961, 241; also Grensemann, 1982, 153.

XV

A further sentence on affections of the brain, already treated in 12 above, sits oddly here. The placing can be explained in terms of an author's asides or afterthoughts inserted, like separate aphoristic observations, in a draft, without due care for their position in it. The work would seem more coherent if this and other such parenthetical comments were to be reordered, but it would do violence to the overall character of the treatise to move all such passages, rather than leave them in their position as transmitted. However, there are other reasons to suspect the text. The repetition of καί 'and' (seven times) and the collocation ἄλλαι νοῦσοι, αἱ ἄλλαι ἀδένες, ἄλλη σύνοδος is very odd. The syntax is fractured too, even by the standards of this work. Ermerins emends initially (emendation adopted, discussed below) and argues that the next part (καὶ πονεῖ ... ἀδένες) is so incongruous and so ill adapted to context that it must be *ab aliena manu* 'from another hand'; he can make no sense of the end of the chapter, marked as hopelessly corrupt by Joly also.

1. καὶ πάθηα ἐγκεφάλου ἄλλα 'and other affections of the brain': the Greek is telegraphic and syntax-free. V reads καὶ πάθηα ἐγκεφάλου καὶ ἄλλαι νοῦσοι. With this reading, πάθηα might be explained as accusative of respect and καὶ ἄλλαι νοῦσοι as a careless synonymous nominative in apposition 'as to affections of the brain; and other troubles', but this would be very awkward. Ermerins' emendation to ἄλλα gives tolerable sense, the 'other' affections (of delirium and of madness) then being named, their nature (dangerous) outlined and their effect on the brain (suffering) noted.

παραφροσύνη καὶ μανίαι, καὶ πάντα ἐπικίνδυνα, καὶ πονεῖ ὁ ἐγκέφαλος [καὶ αἱ ἄλλαι ἀδένες] 'cases of delirium and of madness, and all are dangerous, and the brain suffers [and the other glands]': as the other glands have no proper place in discussion of these aberrant mental states, deletion of the phrase referring to them seems justified. It—like καὶ ἄλλαι νοῦσοι above, deleted by Ermerins—may have arisen through a misguided attempt at explanatory elaboration. It seems that delirium was regarded as a mysterious condition, most occurrences of the term in the HC being in aphoristic generalising contexts (half in *Aphorisms* or *Koan Prognoses*), attempting to explain its origin or to define its outcome. In a passage of *Diseases of Girls*, an explanation of 'delirium and madness' (the two terms linked as here) is given in terms of reaction of the vessels

to pressure (*Virg.* 1 [8. 468 L.]). The underlying pathology of this allusive account in *On Glands* is similar, in line with common authorship. The author's interest in abnormal mental states is seen also at the start of *Generation*: nocturnal emissions and erotic dreams are linked with μανίη 'madness' (*Genit.* 1 [7. 472 L.]).

ἔχει γὰρ καὶ τόνον 'for it (*sc.* the brain) has real tension': Littré argues for retention of τόνον, resisting the emendation of Cornarius, followed by Zwinger and commended also by Foesius, to πόνον 'pain'. Littré argues that there is 'une idée vague et obscure des véritables nerfs'; Foesius notes the dual sense of τόνος, both *nervum* and *nervorum contentio*.⁶⁵ Whereas τένων is always concrete in sense ('sinew', 'tendon', 'ligament' etc.), the sense of τόνος may be either abstract or concrete. In the abstract sense the exact meaning is often uncertain, hence the somewhat vague translation 'tension'. The same nexus of associations is apparent in the verb συντείνειν (2.1 and 7.3), applied to tautness as an early symptom of glandular ailments characterised by the ensuing symptoms of swelling and heat. In a passage (also attributable to our author) considering the different metabolisms of men and women it is suggested that the male body neither ὑπερτονέει 'becomes over-tense' nor ὑπερθερμαίνεται 'becomes over-hot' because it is not soft and does not become suffused with blood, and because exercise removes excess (*Mul.* 1. 1 [8. 12, 14 L.]). The expression of physiological theory in *On the Sacred Disease* uses similar vocabulary: pain or tension (πόνος ἢ τάσις) underlie shivering and constriction (φρίσσειν and συντείνεσθαι) (*Morb. Sacr.* 17 [6. 392 L.])

καὶ ἄλλη σύνοδος ἐνταῦθα πάλιν τοῦ σώματος 'and there is a further constriction there back from the body': the precise sense is uncertain. There may be some awareness that the brain is the centre of the nervous system: if so, this is remarkably sophisticated. However, the general meaning, that the body is an organic unity, is paramount: the head plays an important part in receiving moisture from lower parts, then redistributing it; noxious moisture ought not to go 'back' to the head. For the same adverb, in a similar sense and context, there is a close parallel in *Places in Man* (*Loc. Hom.* 12 [6. 298 L.]).

⁶⁵ Littré 8, 571, n. 13, and see also 1, 233; Foesius, 1595, 326, n. 30 and s.v in *Oeconomia*.

XVI

The topic of one final type of gland—breasts—is introduced and the production of milk by the breasts is explained. A very similar account of the physiology of lactation appears in *Nature of the Child* and in *Diseases of Women*.⁶⁶ See Introduction II for the significance of this and other shared content. Men and women are contrasted. The argument is in some respects inconsistent with that in the earlier part of the work: in drawing wide conclusions about differences between the male and the female body on the basis of breast function alone, the author forgets the similarities implicit in his foregoing presentation. It may be that the final chapters are an addendum, in which further ideas are inadequately incorporated, as the author seeks to reconcile his views on glands with his views (or the views of others) on other subjects.

1. ἀλλὰ καὶ ἀδένες ἐν τοῖσι στήθεσι μαζοὶ καλέονται, καὶ δὴ αἰέρονται γάλα ποιέουσι· οἷς δὲ οὐ ποιέουσι γάλα, ⟨οὐ⟩ ‘the glands in the chest are called breasts, and they swell in those producing milk, but not in those not’: the final negative (supplied by Littré) is essential to the sense. οἷς is a compressed expression, standing for ἐκείνοις οἷ, and the second ποιέουσι is third person plural present indicative, the first being dative plural of the present participle. The initial ἀλλὰ καὶ can be categorised as a ‘progressive’ particle usage, the author proceeding to a new aspect or topic (DGP 21–22); the following καὶ δὴ can be seen as a ‘lively’ connective, denoting that something interesting or important follows (DGP 248). To the modern reader, the presentation may seem ingenuous and the information otiose; however, the author’s point is that breasts behave like (other) glands.

Swelling is more usually expressed by the verb οἰδεῖν (as 13.1); but αἰερεσθαι, lit. ‘be raised’, is a medical synonym (as 2.2). Bodily swelling can be good or bad, indicating a natural physical process (as here) or, more commonly, an abnormal pathological upset (as 2 above).⁶⁷ For the latter type expressed by the verb αἰερεσθαι there are parallels in *Internal Affections* and in the gynaecological works (swollen spleen, *Int.* 25 [7. 230 L.]; swollen breasts with ulceration, *Mul.* 2. 133 [8. 282 L.]; swollen feet, breasts and other parts, *Mul.* 2. 174 [8. 354 L.]). Similar ideas are expressed in similar language by the same author in *Nature of the Child*

⁶⁶ For an excellent discussion of other ancient theories, see Dean-Jones, 1994, 216.

⁶⁷ See Craik, 1998, 15.

and in various gynaecological writings (*Nat. Pue.* 21 [7. 512, 514 L.]; cf. also, with the synonymous verb σφουγᾶν, *Mul.* 1. 71 [8. 150 L.] and *Steril.* 233 [8. 446 L.]). In a passage of *Diseases of Women*, breast cancer is clearly described; symptoms include swelling (τὰ στήθεα ἐπαίρεται), appearance of hard little pustules (φυμάτια ... σκληρά) and the outcome is invariably fatal (*Mul.* 2. 133 [8. 282 L.]).

ποιέουσι μὲν αἱ γυναῖκες, οἱ δὲ ἄνδρες οὐ ποιέουσι ‘women produce milk, men do not’: again, the apparently otiose information (but there is some evidence of debate: see below) introduces an argument viewed as significant by the author. The μὲν ... δέ opposition is followed by a further series of perceived contrasts concluding with an emphatic τὰ ἐναντία ‘the opposite’: women are soft, loose and flabby both in their glands and in τὸ ἄλλο σῶμα ‘the rest of the body’ (a phrase much used above and twice repeated here) through inactivity; men are firm, dense and hard overall through exercise. Aristotle describes the chest (στήθος as here) and the breasts through which, in females, the milk comes (μαστοί as here); he adds that male flesh is firm (πυκνή as here) and female flesh spongy and full of interstices (σομφή καὶ πόρων μεστή, parallel to account here); but he then declares that milk can be produced by males also (*HA* 1. 12, 493a), a view reiterated in a circumstantial account of lactation in a male goat on Lemnos (*HA* 3. 20, 522a).

τῇσι μὲν γυναιξὶν ἀραιή τε ἢ φύσις καὶ κατὰ τῶν ἀδένων, ὥσπερ τὸ ἄλλο σῶμα ‘women’s nature is fine with regard also to the glands, like the rest of the body’: although the transmitted text has some awkwardness, two notions with parallel force having different expression (‘with regard also to the glands, like the rest of the body’), this is not intolerable. Joly adopts κάρτα from Zwinger’s marginalia, a palaeographically easy change which would give the sense ‘the nature of the glands in women is indeed very soft, like the rest of the body’, a strong asseveration with the adverb κάρτα, used elsewhere by the author (see on 2.1). However, the word order would then be unacceptably odd. The fine (flabby, porous) character of female flesh was stressed initially and is further explained in what follows.

καὶ τὴν τροφὴν, ἣν τινα ἔλκουσιν ἐπὶ σφέας, ἀλλοιοῦσιν ἐς τὸ γάλα ‘and they change the food which they draw into themselves into milk’: the brief account given here—that food ingested by the mother is squeezed out by the omentum and passed on via the womb to the breasts, changed

into milk for the infant—accords with the more extended theoretical accounts given by the author elsewhere (*Nat. Pue.* 21 [7. 510 L.] and *Mul.* 1. 73 [8. 156 L.]). See Introduction II.

καὶ ἀπὸ τῆς μήτρης παραγίνεται ἐπὶ τοὺς μαζοὺς ἐς τὴν μετὰ τὸν τόκον τῷ παιδίῳ τροφήν ‘it goes from the womb to the breasts for the child after birth as nourishment’: the same word τροφή ‘nourishment’ is used of food for mother and child.

ἢν τινα ἀποπιέζει, εἰ ὑπερβάλλει, τὸ ἐπίπλοον ἐς τὰ ἄνω, στενοχωρούμενον ὑπὸ τοῦ ἐμβρύου ‘which the omentum squeezes out to parts above it, if it has an excess, cramped by the foetus’: the important concepts of pressure, excess and space all play a part in the aetiological scheme postulated. Pressure in the body is invoked also to explain infertility: in cases of excessive plumpness the omentum (epiploon) ἀποπιέζει ‘presses on’ the womb and so prevents conception (*Nat. Mul.* 20 [7. 340 L.], *Steril.* 229 [8. 438 L.]).⁶⁸

The presence or absence of space expressed in terms of εὐρυχωρία and στενοχωρία is a fundamental concept recurrent in the author’s works and characterises all his theories of displacement and motion, whether in the body or in nature. Thus, in *On Generation*, similar terms are used of water in a vessel and trees in a wood (*Genit.* 2 [7. 474 L.]). These theories are based on the Demokritean concept of atoms, whether inside or outside the body.⁶⁹ The notion of body parts lacking or having space, and of matter moving to fill available space, is seen in other medical texts also; thus, in *Diseases* 3 ἐκ τῆς στενοχωρίας ἐς τὴν εὐρυχωρίην ἦλθε τὸ πῦον ‘the pus went from a cramped to an ample space’ (*Morb.* 3. 16 [7. 152 L.]).

2. τοῖσι δὲ ἄρσεσι καὶ ἡ στενοχωρία καὶ ἡ πυκνότης τοῦ σώματος μέγα συμβάλλεται μὴ εἶναι μεγάλας τὰς ἀδένας ‘but in males both the cramped space and the denseness of the body greatly contribute to lack of size in the glands’: the substantive στενοχωρία immediately after the cognate verb above indicates an author’s tendency to reuse vocabulary, especially where a significant concept is expressed. The author seems to conclude that *all* glands are bigger in females than in males. This is manifestly false. A generalisation is made on the basis of one particular case (breasts), and the implicit conclusion is left unexpressed. Whether

⁶⁸ Cf. Lonie, 1981, 209.

⁶⁹ So already Wellmann, 1929, 319.

the error is unconsciously overlooked or consciously ignored can only be surmised.

τὸ γὰρ ἄρσεν ναστόν ἐστι καὶ οἶον εἶμα πυκνὸν καὶ ὀρέοντι καὶ ἐπαφωμένῳ· τὸ δὲ θῆλυ ἀραιὸν καὶ χαῦνον καὶ οἶον εἴριον ὀρέοντι καὶ ἐπαφωμένῳ ‘for the male is firm and like dense cloth both to see and to touch, whereas the female is fine and flabby and like wool to see and to touch’: the comparison of female flesh to wool replicates the comparison initially made of glands to wool (1 above), and suggests a curious oblique rapprochement between women and glands.⁷⁰ The allusive analogy of dense cloth and soft wool is fully explained by the author elsewhere in terms of demonstration by experiment (*Mul.* 1. 1 [8. 12, 14 L.]; see Introduction II). As noted above, the idea that the male body is dense and the female soft and spongy appears also in Aristotle, there too in the context of breasts and lactation (*Arist. HA* 1. 12, 493a).

ὥστε τὴν ὑγρασίην οὐ μεθίησι τὸ ἀραιὸν καὶ μαλακόν· τὸ δὲ ἄρσεν οὐκ ἂν τι προσδέξαιτο, πυκνόν τε ἐὼν καὶ ἀστεργές ‘and so what is fine and soft retains (lit. does not discharge) moisture. The male would not absorb (lit. receive) any, being dense and unreceptive’: two pairs of contrasting adjectives express the supposed contrast between the male and the female body, the former hard and dense, the latter soft and yielding. Such contrasts are ubiquitous in early scientific and medical prose, couched for the most part in predictable formulaic terms; here, ἀστεργές is an unusual formation, which shows again the author’s liking for alpha privative formations.

καὶ ὁ πόνος κρατύνει αὐτοῦ τὸ σῶμα, ὥστε οὐκ ἔχει δι’ οὗ λήψεται τι τῶν περισσῶν ‘and exercise hardens his body so that it has no means to receive any superfluous stuff’: exercise rather than work is intended; this is not a value judgment on lazy women and busy men.⁷¹ It is conveniently forgotten that glands in both sexes serve to receive superfluous moisture (as, especially, 4 above, where superfluity is expressed in the same word, περισσός). In any case, superfluity is not entirely relevant in this context, but arises from the common idea that women are more moist than men and that their superfluous moisture is eliminated in menstruation.

⁷⁰ See Craik, 2002, 290, n. 4.

⁷¹ Pace Dean-Jones, 1994, 58.

οὕτως ἀναγκάζει ὁδε ὁ λόγος ‘thus, this argument leads to the inevitable conclusion’: in conjunction with διὰ τὰ προειρημένα ‘because of what has been said before’ (or ‘the aforementioned considerations’) the conclusion strives to set a seal of logic, in fact not impeccable, on reasoning presented as unassailable. Similarly in *Nature of the Child* it is argued αὐταί μοι ἀνάγκαι προσηγμέναι εἰσὶν ‘these unassailable reasons have been adduced by me’ and again ἀνάγκη ἐστὶ κατὰ τοῦτον τὸν λόγον ‘it is necessary, according to this argument’ (*Nat. Pue.* 12, 18, 30 [7. 488, 504, 538 L.]).⁷²

καὶ στήθεα καὶ μαζοὺς καὶ τὸ ἄλλο σῶμα τῇσι γυναιξὶ χαῦνα καὶ μαλακὰ εἶναι καὶ διὰ τὴν ἀργίην καὶ διὰ τὰ προειρημένα· τοῖσι δὲ ἀνδράσι τὰ ἐναντία ‘that chest, breasts and the rest of the female body are flabby and soft because of inactivity and because of what has been said before; and in the case of men, the opposite’: words of texture are varied, χαῦνος ‘loose-textured’ replacing the near-synonymous ἀραιός ‘fine’ preferred earlier. As already noted, the argument might apply to ‘chest’ and ‘breasts’ (a slightly odd tautology), but not to ‘the rest of the body’.

XVII

It is argued that the theory that the breasts perform the same function as other glands—the removal of excess moisture from the body—is confirmed by observation of the (alleged) consequences of breast removal. But the author’s use of ‘evidence’ from observation is confined to that invoked to support his theories. When the proper vessels are removed, the body finds an alternative place to dump superfluous moisture. The myth of the Amazons may be implicit in this fanciful account of breast removal, though here the stated cause is ‘illness or some other misfortune’. Surely surgical removal is not intended. Certain circumstances might cause the breasts to shrink and shrivel through lack of oestrogen, leading to gradual atrophy and apparent masculinisation. The most common might be an early menopause and the most dramatic perhaps a brain tumour (which would certainly cause headaches, a symptom mentioned below). The rationale is curiously reminiscent of that which once

⁷² Cf. Joly, 1970/2003, 54, n. 2 ‘une évidence rationnelle inébranlable’.

motivated extirpation experiments, leading to such discoveries as that castrating a cock led its comb to atrophy, and that thyroidectomy was fatal to dogs and guineapigs.

1. ποιέουσι καὶ μαζοὶ φύματα, φλεγμονάς, τὸ γάλα ἀποσῆποντες ‘the breasts too give rise to pustules, phlegmy matter, causing the milk to rot’: Ermerins deletes φλεγμονάς, but parallel pathology appears above, with regard to both neck (7.3) and chest (14.1). The presence of pustules is viewed as a constant aspect of glandular disease (in general terms, 2; in related terminology of suppuration with reference to the armpits, 8). Here, breast cancer with typical lymphatic spread has perhaps been observed, as in a case clearly described in *Diseases of Women* (*Mul.* 2. 133 [8. 282 L.]). But the diagnosis remains uncertain. The same term φῦμα might refer rather to an abscess arising from inflammatory mastitis, as is probable in the case of Queen Atossa,⁷³ cured according to Herodotos by the Greek physician Demokedes (*Hdt.* 3. 129–131; see also DK 19).

ἀγαθὰ δὲ ἔχουσι τοῖσιν ἔμπροσθεν ὅμοια· ἀποστερίζουσι τὴν πλεονεξίην τοῦ ἄλλου σώματος ‘but they have similar benefits to those already discussed. They remove excess from the rest of the body’: simple terms of ‘good’ (8, 10) and ‘bad’ (8, cf. 12.2) are used to describe healthy and unhealthy bodily states. For ‘removal’ of moisture, cf. 10 above.

μαρτύριον τῇσι γυναιξὶν ἣσιν ἀφαιρεῖται νοῦσος ἢ ἄλλη τις συμφορὰ μαζούς ‘there is evidence in the case of women from whom illness or some other misfortune removes the breasts’: editors have consistently altered the ms reading μαρτύριον τῇσι γυναιξὶν ἣσιν ἀφαιρεῖται νοῦσος ἢ ἄλλη τις ξυμφορὰ μαζός (which will not do, as the series of nominatives, νοῦσος ἢ ἄλλη τις ξυμφορὰ followed by μαζός, cannot be construed) to μαρτύριον τῇσι γυναιξὶν ἣσιν ἀφαιρεῖται νόσῳ ἢ ἄλλῃ τινὶ συμφορῇ μαζός ‘evidence in the case of women from whom a breast is removed through illness or some other misfortune’ (ἀφαιρεῖται passive voice; ἣσιν dative of disadvantage). The emendation proposed above (ἀφαιρεῖται middle voice; ἣσιν dative of disadvantage) is preferable both because it involves less change to the transmitted text (only μαζός to μαζούς) and because it gives better sense: after all, in theory the remaining breast would suffice if one had been lost. It is implicit in the author’s

⁷³ See Sandison, 1959.

reasoning that the breasts perform a similar function at all times as during pregnancy and lactation.

καὶ ἡ φωνὴ θρασεῖα, καὶ ὑγρὰ ἐς στόμαχον, καὶ πτυελίζουσι, καὶ τὴν κεφαλὴν ἀλγέουσιν, καὶ ἀπὸ τῶνδε νοσέουσιν ‘the voice is bold, moistness (goes) to the throat, they salivate, and they have headaches, and from these conditions they are ill’: τραχεῖα ‘rough’ is read in place of θρασεῖα ‘bold’ by Cornarius and noted by Zwinger. However, ‘boldness’ in the voice is regarded in aphoristic collections as a common aspect of mental troubles, sometimes specifically in women (*Prorrh.* 1. 26 and 123 [5. 516 and 552 L.]; *Coac.* 1. 84, 2. 151 and 2. 241 [5. 602, 616 and 636 L.]). In *Diseases of Women*, it is suggested that where the lochia went up in the body instead of being properly discharged, the resulting symptoms included ‘crazy delusions’ and, in some cases, θράσος ὁμμάτων ἰλλωδέων ‘boldness in wandering eyes’ (*Mul.* 1. 41 [8. 100 L.]). Ermerins postulates a lacuna after the phrase καὶ ὑγρὰ ἐς στόμαχον ‘moistness (goes) to the throat’, on the grounds that a verb such as ξυρρέει ‘flows’ is required. But throughout the work, and especially in the final chapters, the expression is telegraphic, suggesting rapid writing outstripping the pace of thought or, perhaps, notes made to aid oral delivery. The collocation of symptoms is typical of women’s accounts of their state in Hippocratic gynaecology; headaches in particular are ubiquitous.

ἰὸν γὰρ ἀπὸ τῆς μήτρης καὶ ἐπιρρέον τὸ γάλα, ὥσπερ μεθίετο καὶ ἔμπροσθεν ἐς τὰ ἄνω τεύχεα, τὰ οἰκεία οὐκ ἔχον τεύχεα ‘for the milk, coming from the womb and flowing in, just as it was discharged before into the upper channels, not (any longer) having its own channels’: this word for bodily vessels or ducts of any kind occurs several times in *Places in Man*, but elsewhere in the HC only in *On Glands* and *Superfetation*.⁷⁴ Conversely, a lack of milk is explained in the case of women who are πυκνοσάρκοι ‘dense-fleshed’; no moisture can travel from the belly πυκνῆς τῆς ὁδοῦ ἐούσης ‘the pathway being dense’ (*Mul.* 1. 73 [8. 156 L.]).

συντυγχάνει τοῖσι κυρίοισι τοῦ σώματος, καρδίῃ, πλεύμονι, καὶ ἀποπνίγονται ‘meets with the vital parts of the body, heart, lung; and they suffocate’: there is some awareness of the mechanism of respiration in

⁷⁴ See Craik, 1998, 99–100.

this list of ‘vital’ parts. Hippocratic women were prone to symptoms of choking (cf. 12.2 above) or suffocation.⁷⁵ In *Diseases of Women*, suffocation in pregnancy is explained; further, one of the symptoms alleged to appear when the womb had left its proper place and attached itself to the liver was an excess of saliva causing, if the womb failed to return, suffocation (*Mul.* 1. 32 [8. 76 L.]; *Mul.* 1. 7 [8. 32 L.]). And in a case where the lochia was supposedly lodged in the chest and lung, so that the lung ‘filled with blood’, death ensued (*Mul.* 1. 41 [8. 98 L.]). Several passages in *Nature of Women* detail circumstances thought to induce suffocation (*Nat. Mul.* 29, 32, 87 [7. 344, 358–360, 408 L.]); typically, precipitating symptoms include amenorrhoea, breathlessness, and depression (*Nat. Mul.* 41 [7. 384 L.]). In *Diseases of Girls*, an excess of menstrual blood is thought to wander (in much the same way as the womb itself does) to various places in the body; in some cases the resulting condition is benign, in others carries danger of mental derangement. A particularly dangerous case is the heart: ὁ τόπος ἐπικαιρός ‘the place is vital’ (*Virg.* 1 [8. 466 L.]). The author’s thought is consistent.

⁷⁵ See King, 1998, 215–217 on suffocation and ‘hysteria’.

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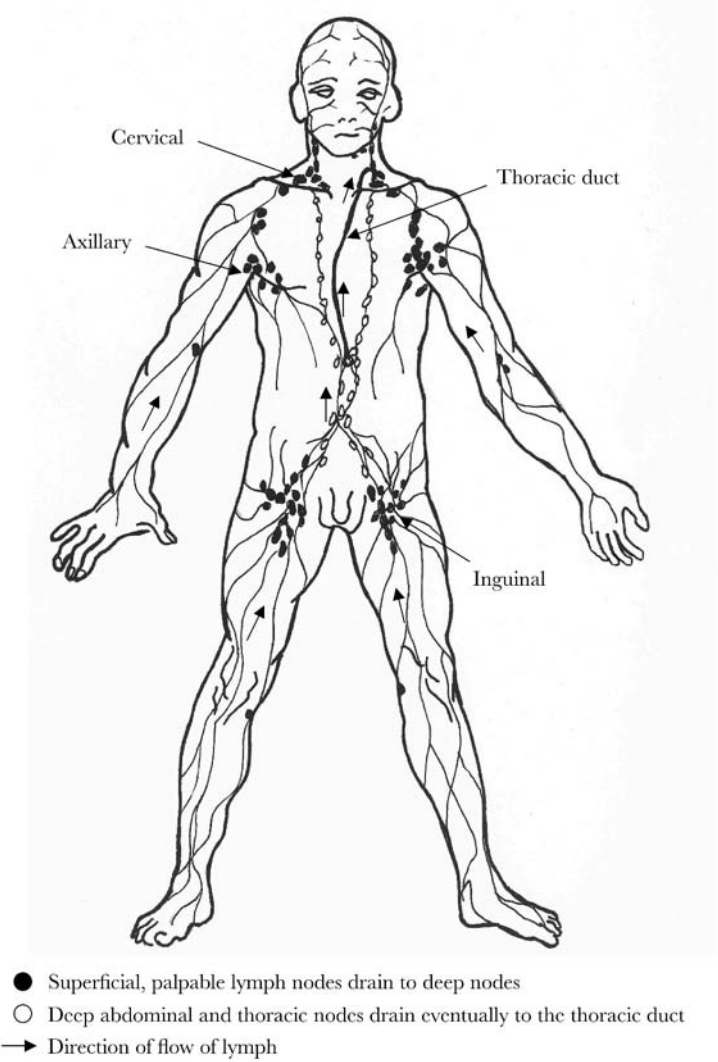
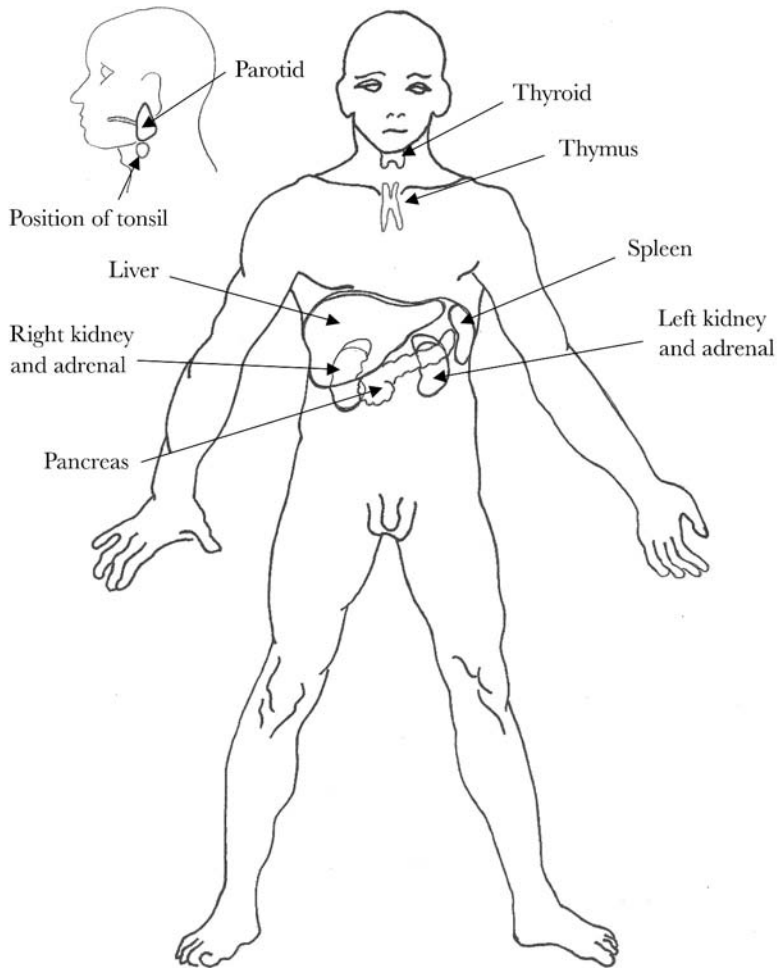


Diagram 1. Lymphatic System of the Body



The kidneys and adrenals lie on the posterior wall of the abdomen and are overlain by the pancreas. The liver and spleen lie tucked below the diaphragm.

Diagram 2. Major Glands of the Body

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